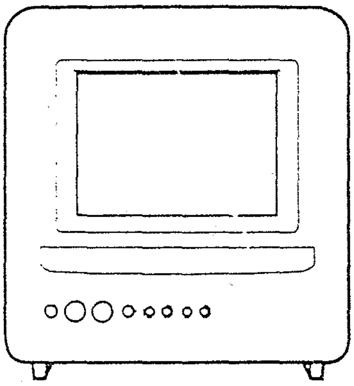
Service Manual

ORION

COMBI 650 LCD

LCD COLOR TELEVISION/
VIDEO CASSETTE RECORDER



VHS
PAL

Chassis Code:	Bestell-Nr.:
A	7541

SPECIFICATIONS

(TV SECTION)

PICTURE SIZE:	6.5 inch
SYSTEM:	PAL B/G
FREQUENCY RANGE	
VHF (L):	2-4, X, Y, Z, S1-S10 ch
VHF (H):	5-12, S11-S41 ch
UHF:	21-69 ch
INTERMEDIATE FREQUENCY	
Picture IF Carrier Frequency:	38.9 MHz
Color Sub Carrier Frequency:	34.47 MHz
Sound IF Carrier Frequency:	33.4 MHz
SOUND INTERMEDIATE FREQUENCY:	5.5 MHz
MAXIMUM OUTPUT POWER:	1.5 W
10% THD OUTPUT POWER:	1.0 W
SPEAKER:	16 ohm × 1
POWER SOURCE:	AC 230V/50Hz DC 12V

(VCR SECTION)

VIDEO RECORDING SYSTEM:	VHS, 2 rotary heads helical scanning system Luminance : FM azimuth recording Color signal : converted sub-carrier
AUDIO TRACK:	1 track
TAPE FORMAT:	12.65 mm high density tape
TAPE SPEED:	SP : 23.39 mm/sec
TEMPERATURE:	Operation : 5℃ to 40℃ Storage : -20℃ to 60℃
F.FWD/REW TIME:	Approx.3 minutes 30 seconds (With E-180 Cassette Tape)
INPUT LEVEL:	Video : VIDEO IN socket 1.0Vp-p, 75 ohm unbalanced Audio : AUDIO IN socket 300mV, 50K ohm unbalanced
OUTPUT LEVEL:	Video : VIDEO OUT socket 1.0Vp-p, 75 ohm unbalanced Audio : AUDIO OUT socket 390mV, 1K ohm unbalanced
WEIGHT:	3.7 Kg
DIMENSIONS:	240(W) X 120(D) X 255(H) mm

Design and specification are subject to change without notice.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-LAY

Safety is secured against an X-lay by considering about the cathode-ray tube and the high voltage
peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-lay from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]
If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]
External exposure metal: Antenna terminal

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

1. MODEL NUMBER and CHASSIS CODE
   You can find it in the back of your unit.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

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DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET AND CASSETTE LID ASSS'Y (Refer to Fig. 1-1)

1. Remove the 2 screws ①.
2. Remove the Cassette Lid Ass'y.
3. Remove the 10 screws ②.
4. Remove the Back Cabinet.
5. Disconnect the following connector: (CP1005 4 pins)

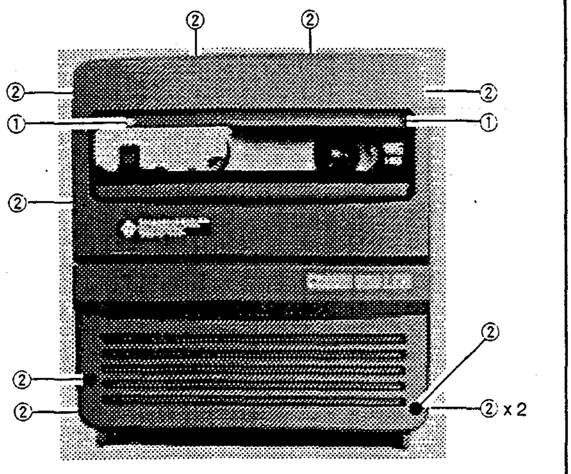


Fig. 1-1

1-2: BACK CABINET ASS'Y AND BATTERY PCB (Refer to Fig. 1-2)

1. Remove the 2 screws ①.
2. Remove the Back Cabinet Ass'y.
3. Remove the 2 screws ②.
4. Remove the Battery PCB.

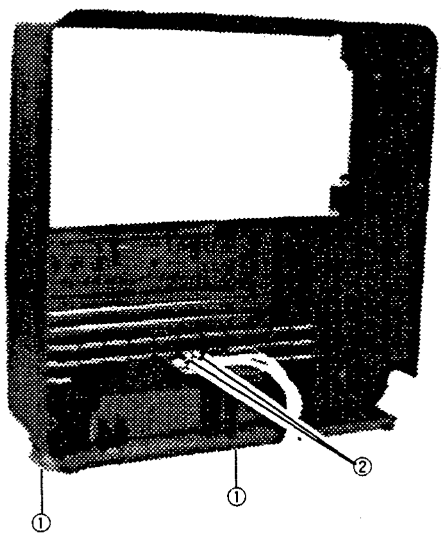


Fig. 1-2

1-3: TOP LOADING AND CHASSIS SECTION (Refer to Fig. 1-3-A)

1. Remove the 4 screws ①.
2. Remove the Top Loading.
3. Remove the 6 screws ②.
4. Remove the Chassis Section.

NOTE

When installing the Top Loading, align the timing marks. (Refer to Fig. 1-3-B)

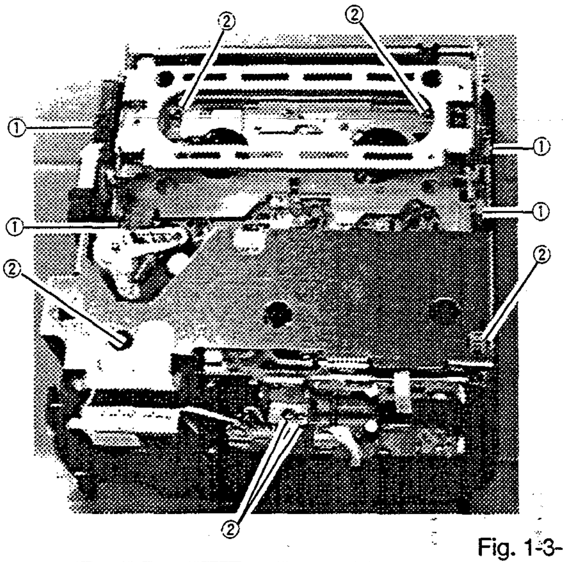


Fig. 1-3-A

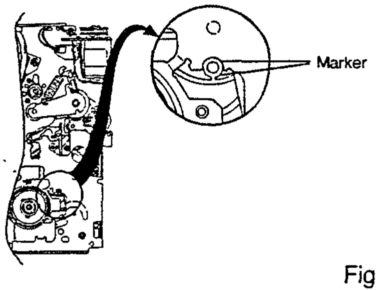


Fig. 1-3-B

1-4: DECK HOLDER AND MAIN PCB (Refer to Fig. 1-4)

1. Disconnect the following connector: (CP1001 12 pins, CP1002 8 pins and CP1004 12 pins)
2. Remove the 3 screws ①.
3. Remove the Deck Holder.
4. Remove the screw ②.
5. Remove the Main PCB.

DISASSEMBLY INSTRUCTIONS

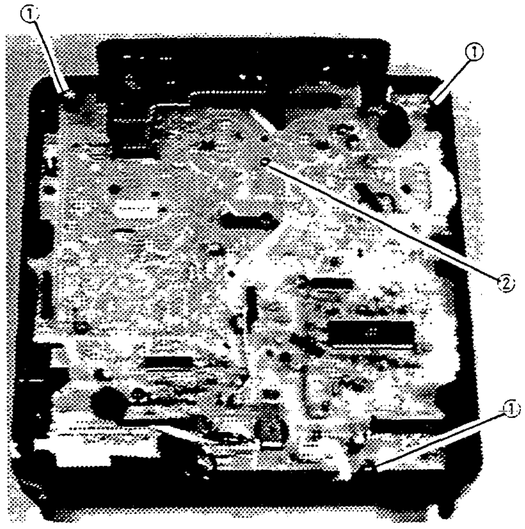


Fig. 1-4

1-5: LCD PCB AND JACK PLATE (Refer to Fig. 1-5)

1. Remove the 8 screws ①.
2. Remove the LCD PCB and Jack Plate.

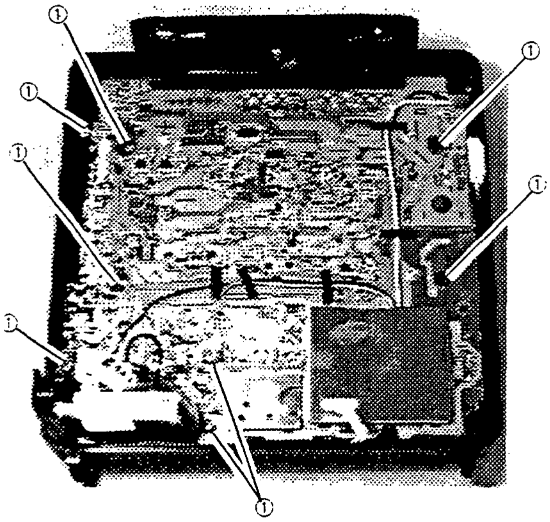


Fig. 1-5

1-6: LCD BLOCK (Refer to Fig. 1-7)

1. Disconnect the following connector: (CP8001 30 pins and CP4502 2 pins)
(When removing, pull the position (A) and when installing, push the position (A), as illustrated in Fig. 1-6.)
2. Remove the 4 screws ①.
3. Remove the 2 screws ②.
4. Remove the LCD Block.

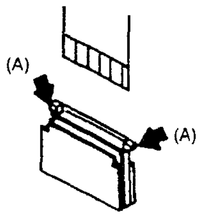


Fig. 1-6

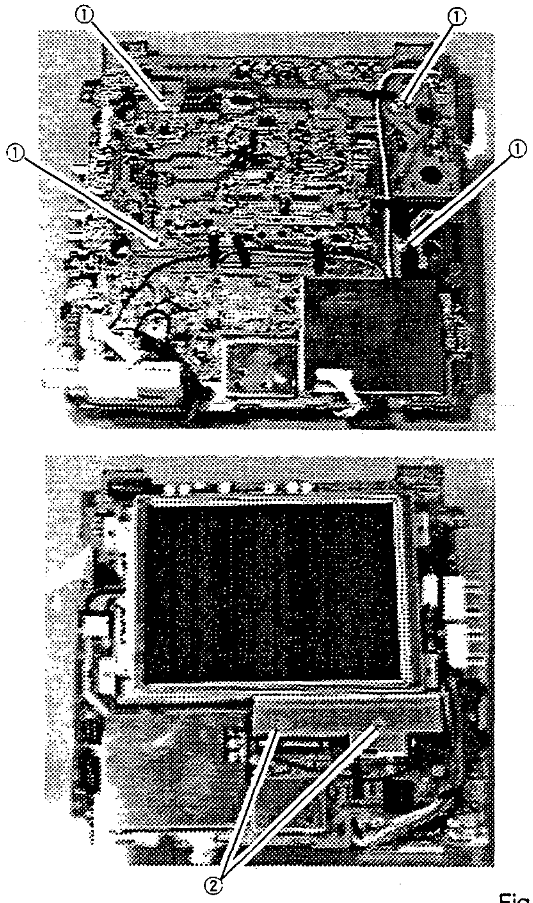


Fig. 1-7

1-8: OPERATION PCB (Refer to Fig. 1-8)

1. Remove the 4 screws ①.
2. Remove the Operation PCB.
3. Disconnect the following connector: (CP701 2 pins)

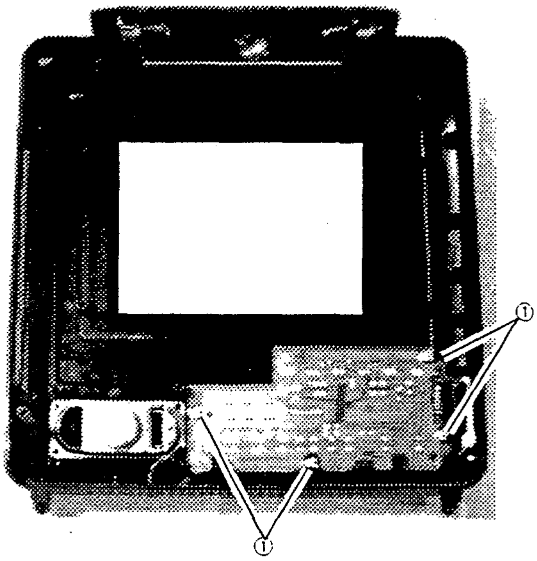


Fig. 1-8

DISASSEMBLY INSTRUCTIONS

1-9: LOCATION OF PRINTED CIRCUIT BOARDS.
(Refer to Fig. 1-9)

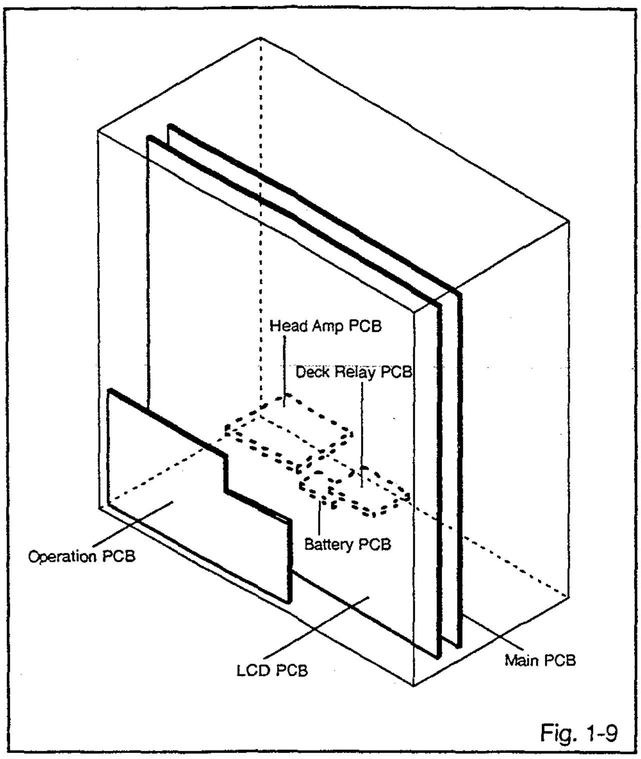

Head Amp PCB
Deck Relay PCB
Operation PCB
Battery PCB
LCD PCB
Main PCB

Fig. 1-9

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DECK PARTS

2-1: BRAKE BRACKET (Refer to Fig. 2-1)

1. Remove the Main Brake Spring, S-S Brake Spring, Joint Arm Spring, T-S Brake Spring, Tension Lever Spring 3 and and Tension Arm Spring 3.
2. Remove the 2 screws ①.
3. Remove the screw ②.
4. Remove the Brake Bracket.
5. Remove the Sub Brake S, Sub Brake T, Main Brake S Ass'y, Main Brake T Ass'y and Tension Lever 3.
6. Remove the Joint Arm.
7. Remove the Reflector LED.
8. Remove the E-Ring.
9. Remove the Tension Arm 3 Ass'y.

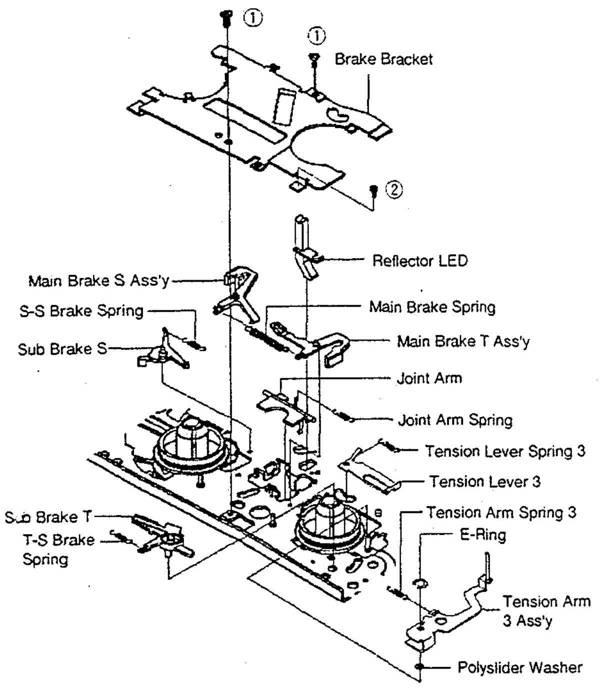

①
①
Brake Bracket
②
Reflector LED
Main Brake S Ass'y
S-S Brake Spring
Main Brake Spring
Sub Brake S
Main Brake T Ass'y
Joint Arm
Joint Arm Spring
Tension Lever Spring 3
Tension Lever 3
Sub Brake T
T-S Brake Spring
Tension Arm Spring 3
E-Ring
Tension Arm 3 Ass'y
Polyslider Washer

Fig. 2-1

2-2: TENSION BAND (Refer to Fig. 2-2)

1. Remove the Tension Arm Spring 1.
2. Remove the Tension Arm Spring 2.
3. Remove the Tension Adjust.
4. Remove the Tension Arm Ass'y.
5. Remove the Tension Band Ass'y.
6. Remove the Tension Lever 2 Ass'y.

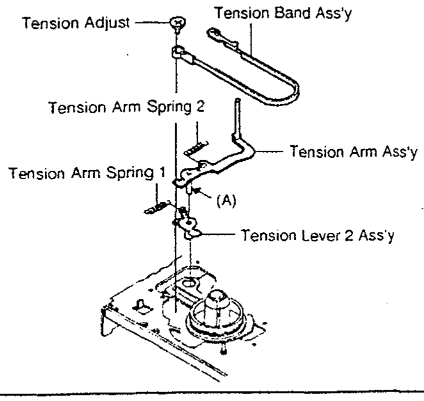

Tension Adjust
Tension Band Ass'y
Tension Arm Spring 2
Tension Arm Ass'y
Tension Arm Spring 1
(A)
Tension Lever 2 Ass'y

Fig. 2-2

NOTES

1. Install the Tension Band Ass'y without twisting it.
2. Turbine Oil (Lubricating Grade #150) the area marked with A in **Fig. 2-2.**

EX: KYOUDO Oil Sulaidasu #150
IDEMITSU Oil Supper Multi #150

2-3: REEL DISK (Refer to Fig. 2-3)

1. Remove the Reel Disk S and Reel Disk T.
2. Remove the 2 polyslider washers.

NOTES

1. Install the Reel Disk after performing steps 1, 2 and 3 in section 2-2 of Disassembly Instructions.
2. The Height Adjustment washers are sometimes attached to the back of the Reel Disk.
3. Clean the Reel Disk Shaft and put in height adjusting washers.
4. Be careful not to damage the Tension Band Ass'y at the time of removal and installation.
5. Be careful not to scratch the Reel Disk Shaft with the polyslider washer or the tool at the time of removal and installation.
6. After oiling (Lubricating Grade #150) the Reel Disk Shaft, install the new Reel Disk S and Reel Disk T again.

EX: KYOUDO Oil Sulaidasu #150
IDEMITSU Oil Supper Multi #150

7. After installation, adjust the height of the Reel Disk. **(Refer to item 1-1 of MECHANICAL ADJUSTMENTS)**
8. After installation, adjust and confirm the tension post position. **(Refer to item 1-2 of MECHANICAL ADJUSTMENTS)**

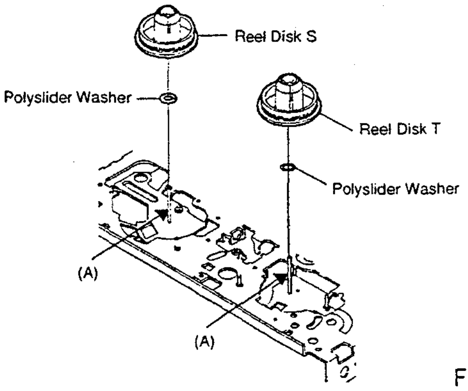

Reel Disk S
Polyslider Washer
Reel Disk T
Polyslider Washer
(A)
(A)

Fig. 2-3

2-4: PINCH ROLLER / CASSETTE OPENER (Refer to Fig. 2-4)

1. Unlock the support ①.
2. Remove the Pinch Roller.
3. Remove the screw ②.
4. Unlock the 2 supports ③.
5. Remove the Cassette Opener.
6. Remove the Spring P5 and Arm P5 Ass'y.
7. Remove the Cam Gear and Cam Pinch Roller.
8. Remove the polyslider washer and Cam P5.

NOTES

1. Do not touch the Pinch Roller. (Use gloves.)
2. When installing the Cam P5, Cam Pinch Roller and Cam Gear, align the timing marks.

DISASSEMBLY INSTRUCTIONS

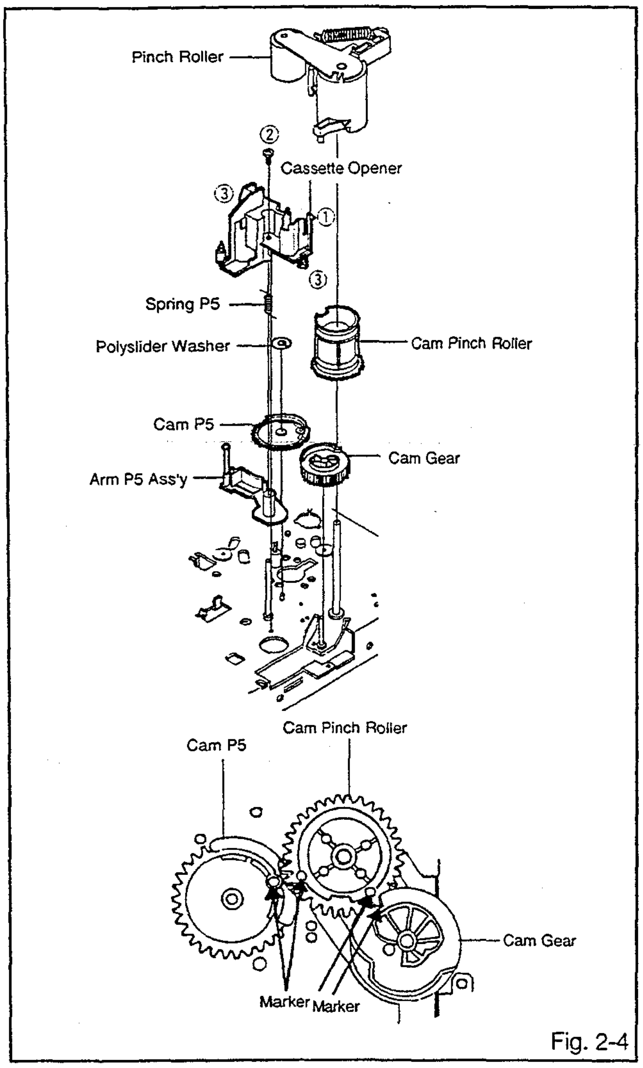

Pinch Roller
②
Cassette Opener
③
①
③
Spring P5
Polyslider Washer
Cam Pinch Roller
Cam P5
Cam Gear
Arm P5 Ass'y
Cam Pinch Roller
Cam P5
Cam Gear
Marker
Marker

Fig. 2-4

2-5: AUDIO CONTROL HEAD (Refer to Fig. 2-5)

1. Disconnect the connector: (CX4001 6 pins) on the Audio Control Head PCB.
2. Remove the 3 screws ①.
3. Remove the 3 Audio Control Head Springs.
4. Remove the Audio Control Head.

NOTES

1. Do not touch the head by any means when replacing the Audio Control Head. (Use gloves.)
2. After replacement, confirm the following adjustments.
    a. MECHANICAL ADJUSTMENTS: ITEM 2-2
    b. MECHANICAL ADJUSTMENTS: ITEM 2-3

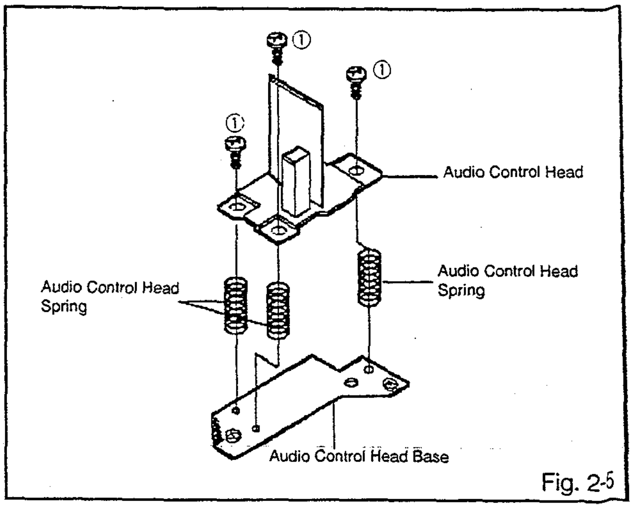

①
①
①
Audio Control Head
Audio Control Head Spring
Audio Control Head Spring
Audio Control Head Base

Fig. 2-5

2-6: CYLINDER UNIT (Refer to Fig. 2-6)

1. Disconnect the following connectors: (CP4101 4 pins and CP4102 5 pins).
2. Remove the Joint Screw, then remove the Azimuth Spring.
3. Remove the 2 screws ①, then remove the Polyslider Washer and Cylinder Unit from the Main Chassis.

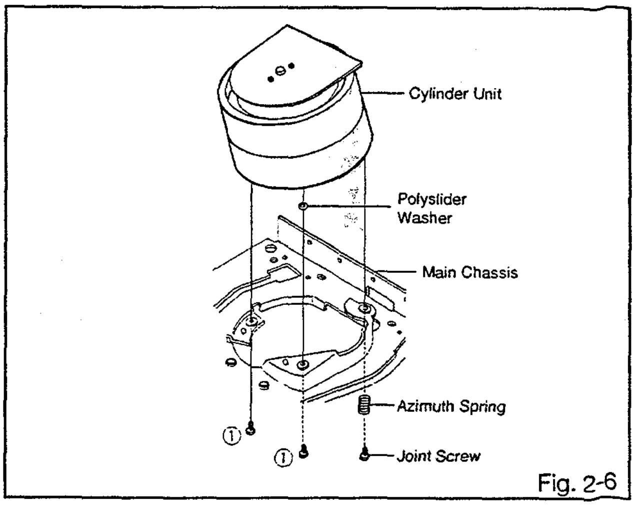

Cylinder Unit
Polyslider Washer
Main Chassis
Azimuth Spring
①
①
Joint Screw

Fig. 2-6

2-7: PLATE BOTTOM (Refer to Fig. 2-7)

1. Remove the Capstan Belt.
2. Remove the 2 screws ①.
3. Remove the 3 screws ②.
4. Remove the Mode Switch.
5. Remove the Tension Lever Spring.
6. Remove the Plate Bottom.

NOTE

When installing the Mode SW, align the timing position.

DISASSEMBLY INSTRUCTIONS

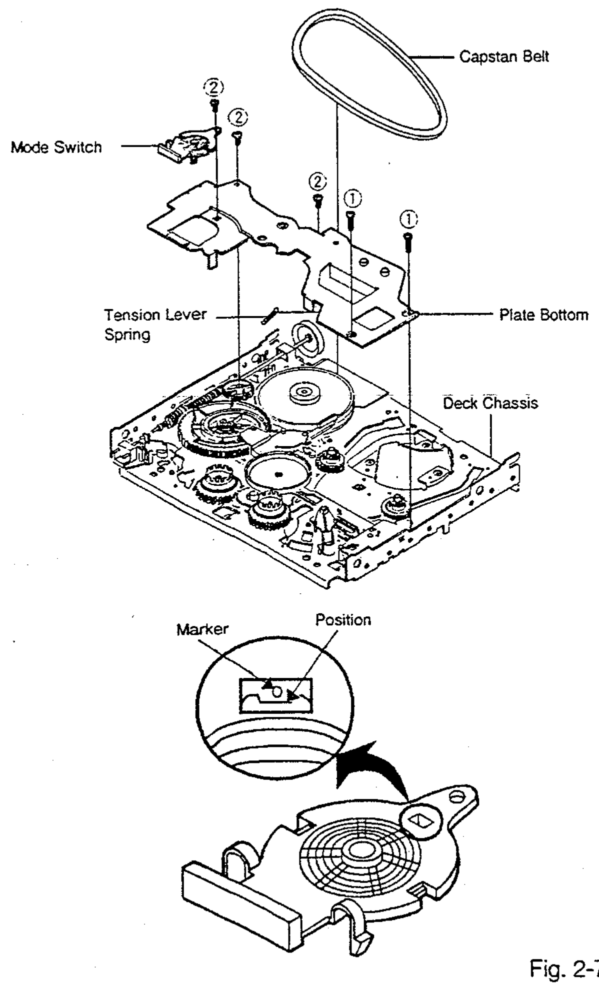

Capstan Belt
②
②
Mode Switch
②
①
①
Tension Lever Spring
Plate Bottom
Deck Chassis
Marker
Position

Fig. 2-7

2-8: CENTER PULLEY (Refer to Fig. 2-8)

1. Remove the polyslider washer ①.
2. Remove the Center Pulley.
3. Remove the polyslider washer ②.
4. Remove the Center Pulley Spring.
5. Remove the Idler Arm Ass'y.
6. Remove the 2 polyslider washers ③.
7. Remove the Clutch Gear T Ass'y and Clutch Gear S Ass'y.

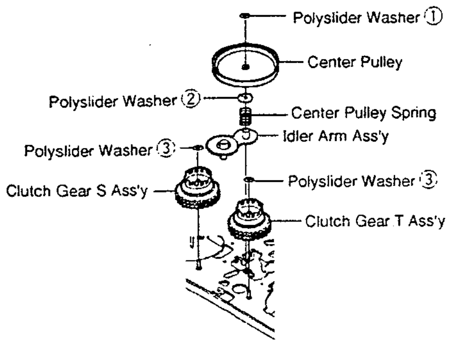

Polyslider Washer ①
Center Pulley
Polyslider Washer ②
Center Pulley Spring
Idler Arm Ass'y
Polyslider Washer ③
Clutch Gear S Ass'y
Polyslider Washer ③
Clutch Gear T Ass'y

Fig. 2-8

2-9: MAIN CAM (Refer to Fig. 2-9)

1. Remove the Loading Lever.
2. Remove the Main Brake Lever.
3. Remove the Capstan Brake Spring.
4. Remove the Capstan Brake Ass'y.
5. Remove the Main Rod Spring.
6. Remove the Tension Holder.
7. Remove the Tension Lever.
8. Remove the Main Cam.
9. Remove the Middle Gear.
10. Remove the Tension Pinion 3.
11. Remove the Main Rod Ass'y.

NOTES

1. When installing the Main Rod Ass'y, install side (B) first, then install side (A).
2. When installing the Loading Lever, align the timing marks.

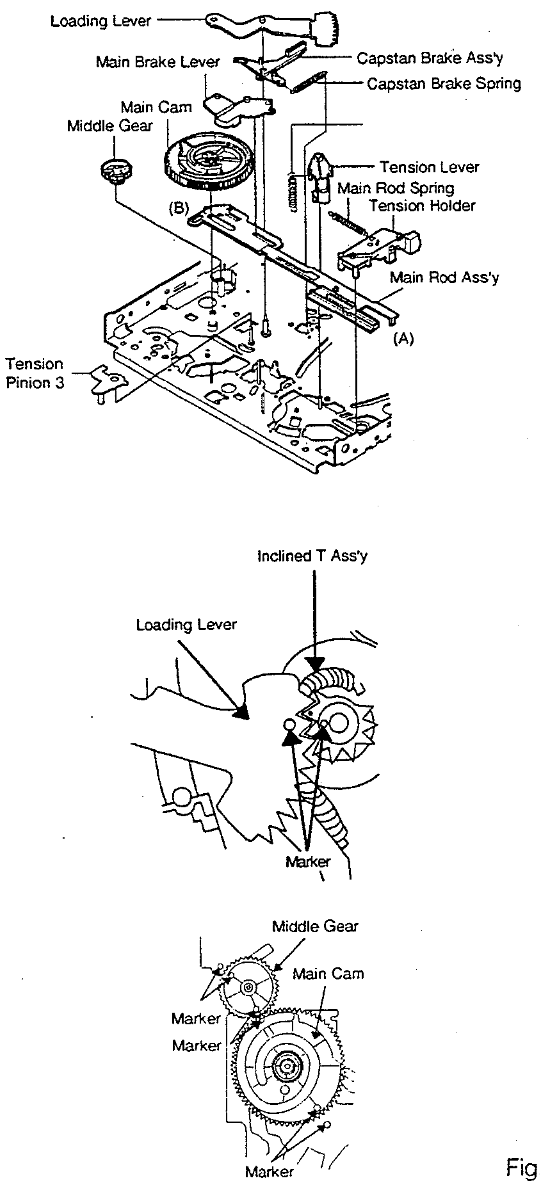

Loading Lever
Main Brake Lever
Capstan Brake Ass'y
Capstan Brake Spring
Main Cam
Middle Gear
Tension Lever
Main Rod Spring
Tension Holder
(B)
Main Rod Ass'y
(A)
Tension Pinion 3
Inclined T Ass'y
Loading Lever
Marker
Middle Gear
Main Cam
Marker
Marker
Marker

Fig. 2-9

DISASSEMBLY INSTRUCTIONS

2-10:CAPSTAN DD UNIT (Refer to Fig. 2-10)

1. Remove the screw ①.
2. Remove the screw ②.
3. Disconnect the CX4003 9 pins.
4. Remove the Deck Relay PCB.
5. Remove the 2 screws ③.
6. Remove the screw ④.
7. Remove the Capstan DD Unit.

NOTE

Use the specified screw to hold the Capstan DD Unit.

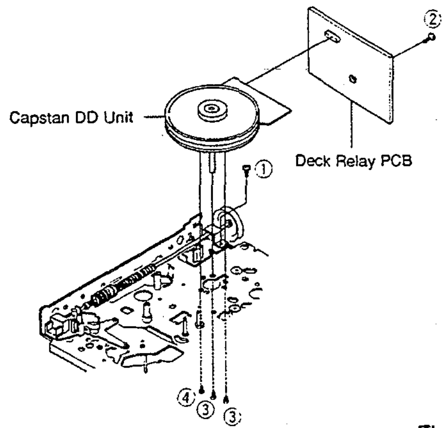

②
Capstan DD Unit
①
Deck Relay PCB
④
③
③

Fig. 2-10

2-11: INCLINED T ASS'Y / INCLINED S ASS'Y (Refer to Fig. 2-11)

1. Remove the 2 CS-Rings.
2. Remove the Inclined T Ass'y and Inclined S Ass'y.
3. Remove the Loading Gear T Ass'y.
4. Remove the Loading Gear S Ass'y.

NOTE

When installing the Inclined T Ass'y and Inclined S Ass'y, align the timing marks.

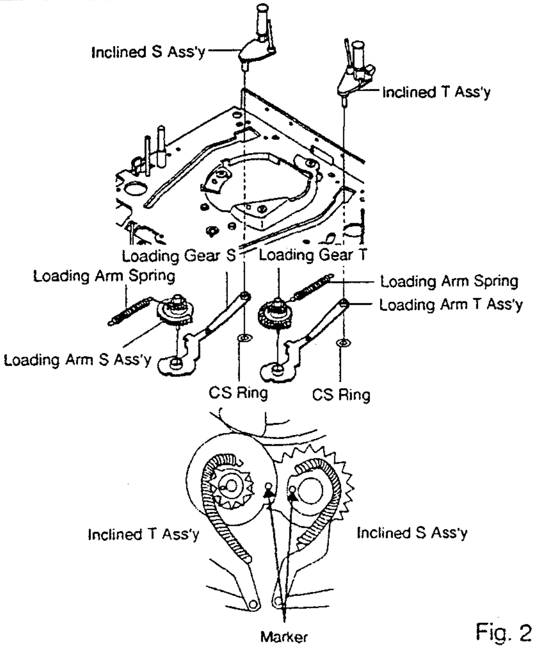

Inclined S Ass'y
Inclined T Ass'y
Loading Gear S
Loading Gear T
Loading Arm Spring
Loading Arm Spring
Loading Arm T Ass'y
Loading Arm S Ass'y
CS Ring
CS Ring
Inclined T Ass'y
Inclined S Ass'y
Marker

Fig. 2-11

KEY TO ABBREVIATIONS

A **A/C** : Audio/Control
ACC : Automatic Color Control
AE : Audio Erase
AFC : Automatic Frequency Control
AFT : Automatic Fine Tuning
AFT DET : Automatic Fine Tuning Detect
AGC : Automatic Gain Control
AMP : Amplifier
ANT : Antenna
A.PB : Audio Playback
APC : Automatic Phase Control
ASS'Y : Assembly
AT : All Time
AUTO : Automatic
A/V : Audio/Video
B **BGP** : Burst Gate Pulse
BOT : Beginning of Tape
BPF : Bandpass Filter
BRAKE SOL : Brake Solenoid
BUFF : Buffer
B/W : Black and White
C **C** : Capacitance, Collector
CASE : Cassette
CAP : Capstan
CARR : Carrier
CH : Channel
CLK : Clock
CLOCK (SY-SE) : Clock (Syscon to Servo)
COMB : Combination, Comb Filter
CONV : Converter
CPM : Capstan Motor
CTL : Control
CYL : Cylinder
CYL-M : Cylinder-Motor
CYL SENS : Cylinder-Sensor
D **DATA (SY-CE)** : Data (Syscon to Servo)
dB : Decibel
DC : Direct Current
DD Unit : Direct Drive Motor Unit
DEMOD : Demodulator
DET : Detector
DEV : Deviation
E **E** : Emitter
EF : Emitter Follower
EMPH : Emphasis
ENC : Encoder
ENV : Envelope
EOT : End of Tape
EQ : Equalizer
EXT : External
F **F** : Fuse
FBC : Feed Back Clamp
FE : Full Erase
FF : Fast Forward, Flipflop
FG : Frequency Generator
FL SW : Front Loading Switch
FM : Frequency Modulation
FSC : Frequency Sub Carrier
FWD : Forward
G **GEN** : Generator
GND : Ground
H **H.P.F** : High Pass Filter
H.SW : Head Switch
Hz : Hertz
I **IC** : Integrated Circuit
IF : Intermediate Frequency
IND : Indicator
INV : Inverter
K **KIL** : Killer
L **L** : Left
LCD : Liquid Crystal Display
LED : Light Emitting Diode
LIMIT AMP : Limiter Amplifier
LM, LDM : Loading Motor
LP : Long Play
L.P.F : Low Pass Filter
LUMI. : Luminance
M **M** : Motor
MAX : Maximum
MINI : Minimum
MIX : Mixer, mixing
MM : Monostable Multivibrator
MOD : Modulator, Modulation
MPX : Multiplexer, Multiplex
N **NC** : Non Connection
NR : Noise Reduction
O **OSC** : Oscillator
OPE : Operation
P **PB** : Playback
PB CTL : Playback Control
PB-C : Playback-Chrominance
PB-Y : Playback-Luminance
PCB : Printed Circuit Board
P. CON : Power Control
PD : Phase Detector
PG : Pulse Generator
P-P : Peak-to Peak
R **R** : Right
REC : Recording
REC-C : Recording-Chrominance
REC-Y : Recording-Luminance
REEL BRK : Reel Brake
REEL S : Reel Sensor
REF : Reference
REG : Regulated, Regulator
REW : Rewind
REV, RVS : Reverse
RF : Radio Frequency
RMC : Remote Control
RY : Relay
S **S. CLK** : Serial Clock
S. COM : Sensor Common
S. DATA : Serial Data
SEG : Segment
SEL : Select, Selector
SENS : Sensor
SER : Search Mode
SI : Serial Input
SIF : Sound Intermediate Frequency
SO : Serial Output
SOL : Solenoid
SP : Standard Play
STB : Serial Strobe
SW : Switch

KEY TO ABBREVIATIONS

S	**SYNC**	Synchronization
	SYNC SEP	Sync Separator, Separation
T	**TR**	Transistor
	TRAC	Tracking
	TRICK PB	Trick Playback
	TP	Test Point
U	**UNREG**	Unregulated
V	**V**	Volt
	VCO	Voltage Controlled Oscillator
	VIF	Video Intermediate Frequency
	VP	Vertical Pulse, Voltage Display
	V.PB	Video Playback
	VR	Variable Resistor
	V.REC	Video Recording
	VSF	Visual Search Fast Forward
	VSR	Visual Search Rewind
	VSS	Voltage Super Source
	V-SYNC	Vertical-Synchronization
	VT	Voltage Tuning
X	**X'TAL**	Crystal
Y	**Y/C**	Luminance/Chrominance

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or misuse may cause transformation and aging of rubber parts.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Audio Control Head	■	■	■	■	■	Clean those parts in contact with the tape.
Full Erase Head	■	■	■	■	■	
Loading Motor Belt		■		●		Clean the rubber, and parts which the rubber touches.
Reel Belt		■		●		
Pinch Roller	■	■	■	■	■ ●	
Capstan DD Unit					●	
Loading Motor					●	
Tension Band					●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	■ ●	■	■ ●	■ ●	Clean the Head.

● : Replace ■ : Clean

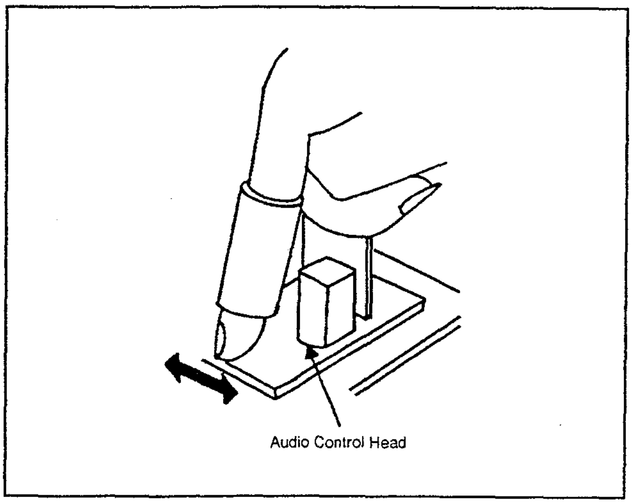
CLEANING

NOTE

- ○ After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

- ○ Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol and clean the audio control head by wiping it horizontally. Clean the full erase head in the same manner. **(Refer to the figure below)**



2. TAPE RUNNING SYSTEM

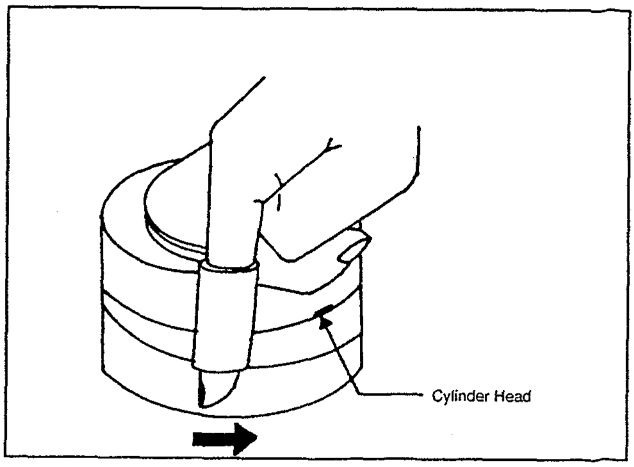
- ○ When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

- ○ Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below)**

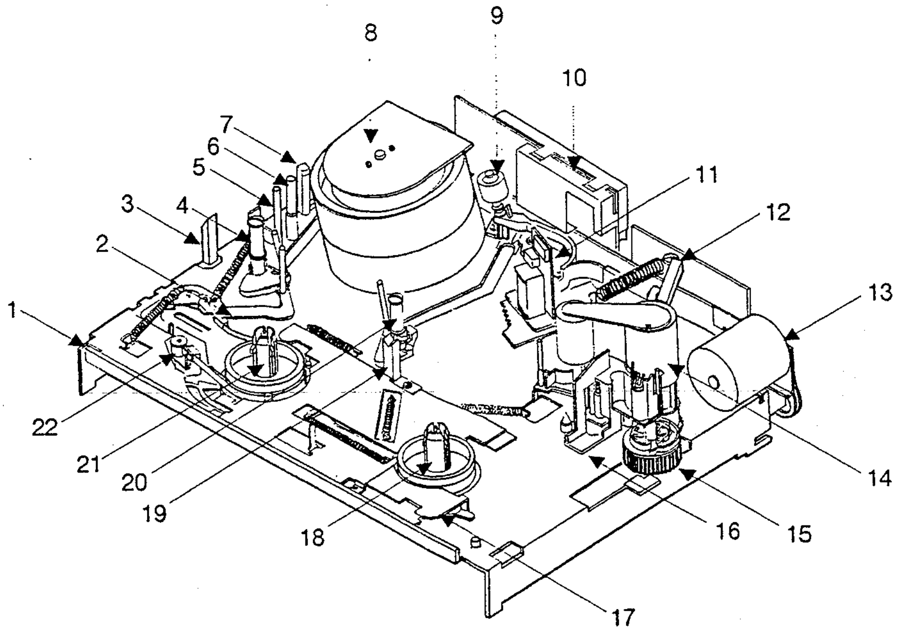
NOTE

Do not exert force against the cylinder head. Do not move the chamois up or down since this can damage the head. Always use a piece of chamois for cleaning.



DECK PARTS LOCATIONS

(TOP VIEW)



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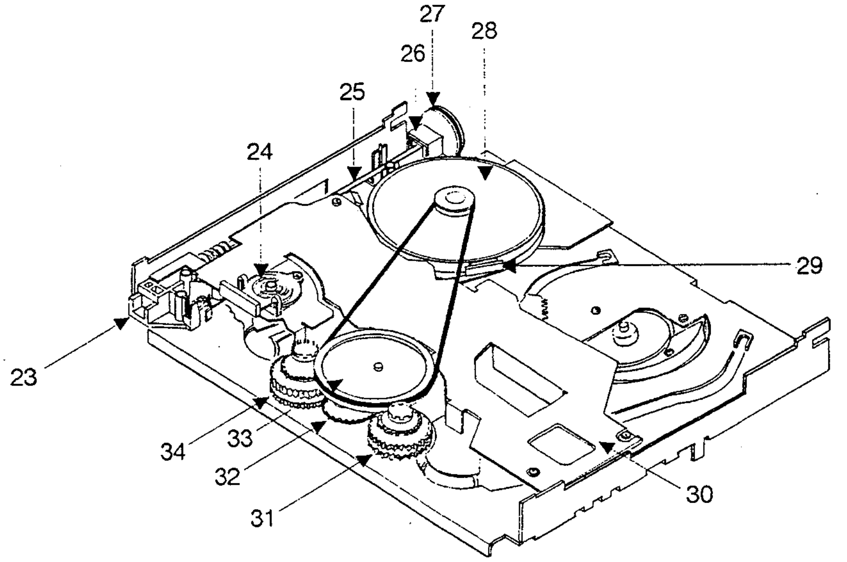
1. Main Chassis
2. Tension Arm Ass'y
3. EOT Reflector
4. Guide Roller S Ass'y
5. P0 Post
6. P1 Post
7. FE Head
8. Cylinder Unit
9. Auto Head Cleaning
10. Head Amp PCB
11. Audio/Control Head
12. Deck Relay PCB
13. Loading Motor
14. Pinch Roller Block
15. Cam Gear
16. Cassette Opener
17. Brake Bracket
18. Reel
19. LED Reflector
20. Guide Roller T Ass'y
21. Reel
22. Tension Band Ass'y

(BOTTOM VIEW)



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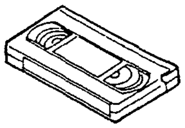
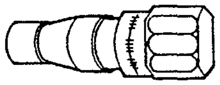
23. Worm Bracket F Ass'y
24. Mode Switch
25. Worm Ass'y
26. Worm Bracket R Ass'y
27. Loading Motor Belt
28. Capstan DD Unit
29. Capstan Brake Ass'y
30. Bottom Plate
31. Clutch Gear S Ass'y
32. Idler Arm Ass'y
33. Center Pulley
34. Clutch Gear T Ass'y

SERVICING FIXTURES AND TOOLS

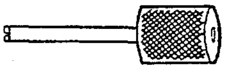
VHS Alignment Tape
JG001E (VP$_1$S-LI6^3)
JG001F (VP$_1$S-C01^3)



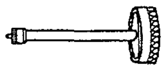
JG002B Adapter
JG002F Dial Torque Gauge (60~600gr/cm)
JG002G (100~1200gr/cm)



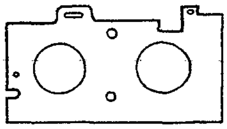
JG005 Post Adjustment Screwdriver



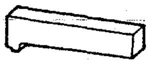
JG153 X Value Adjustment Screwdriver



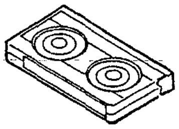
JG022 Master Plane



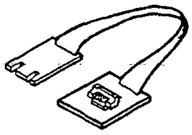
JG024 Reel Disk Height Adjustment Jig



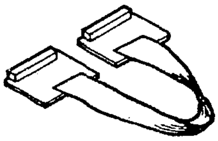
JG100A Torque Tape (VHT-063)



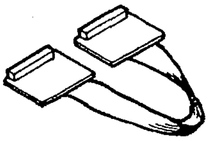
JG150 Cable



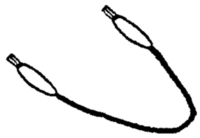
JG151 Cable



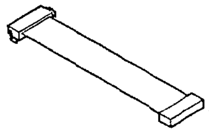
JG152A Cable



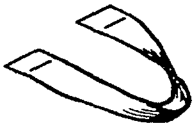
JG154 Cable



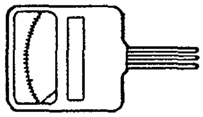
JG162E Cable



JG164 Cable



Tentelometer

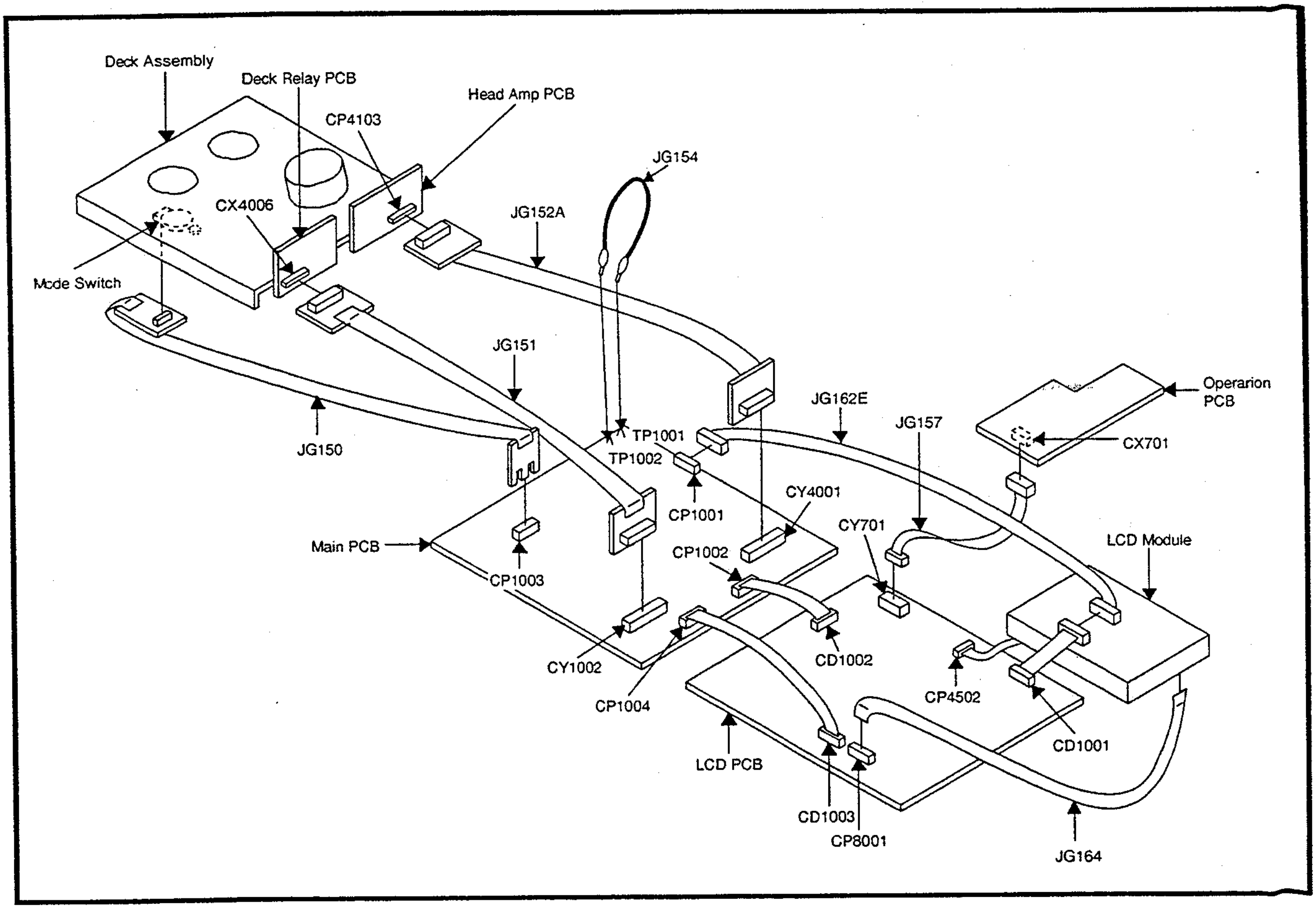


Part No.	Remarks
JG001E	Monoscope, 6KHz
JG001F	Color Bar, 1KHz
JG002F	Playback Take Up Torque
JG002G	Fast Forward Torque, Rewind Torque, Brake Torque(Take up Reel/Supply Reel)
JG005	Guide Roller Adjustment
JG153	X-Value Adjustment
JG022/JG024	Reel Disk Height Adjustment
JG100A	Playback Back Tension Torque
JG150	Used to connect the MAIN PCB and MODE SWITCH
JG151	Used to connect the MAIN PCB and DECK RELAY PCB
JG152A	Used to connect the MAIN PCB and HEAD AMP PCB
JG154	Used to connect the TP1001 and TP1002
JG162E	Used to connect the MAIN PCB and LCD PCB
JG164	Used to connect the LCD PCB and LCD MODULE

PREPARATION FOR SERVICING

How to use the Servicing Fixture

1. Remove the Main PCB from the Deck Chassis.
2. Connect the following connector: (CP1002, CP1004 and CP4502).
3. Connect as shown in the below figure using the Service Fixture.
   - ○ Connect the Main PCB to the Mode Switch with the cable JG150.
   - ○ Connect the Main PCB to the Deck Relay PCB with the cable JG151.
   - ○ Connect the Main PCB to the Head Amp PCB with the cable JG152A.
   - ○ Connect the Main PCB to the LCD PCB with the cable JG162E.
   - ○ Connect the LCD PCB to the Operation PCB with the cable JG157.
   - ○ Connect the LCD PCB to the LCD Module with the cable JG164.
4. Short circuit between **TP1001** and **TP1002** with the cable JG154.
   (Refer to MAJOR COMPONENT LOCATION GUIDE)
5. The EOT, BOT and Reel Sensor do not work at this moment.
   At that time, the STOP/EJECT button is available to insert and eject the Cassette Tape.


Deck Assembly
Deck Relay PCB
Head Amp PCB
CP4103
JG154
CX4006
JG152A
Mode Switch
JG151
Operarion PCB
JG162E
JG157
JG150
TP1001
TP1002
CX701
CY4001
CP1001
CY701
LCD Module
Main PCB
CP1002
CP1003
CD1002
CY1002
CP4502
CP1004
CD1001
LCD PCB
CD1003
CP8001
JG164

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTED items before starting work.

- * Place an object which weighs between 350g and 500g on the Cassette Tape to keep it steady when you want to make the tape run without the Top Loading. (Do not place an object which weighs over 500g.)
- * When you activate the deck without the Top Loading, short circuit between **TP1001** and **TP1002**. In this condition the BOT/EOT sensor will not function.

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024)** on mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A.**
3. Confirm that the reel disk is lower than "A" of the reel disk height adjustment jig **(JG024)** on the master plane and higher than "B" as shown in **Fig. 1-1-B.** If it is not, adjust to less than 7.5mm± 0.2mm with the height adjustment washer.
4. Perform the same adjustment for other reel.

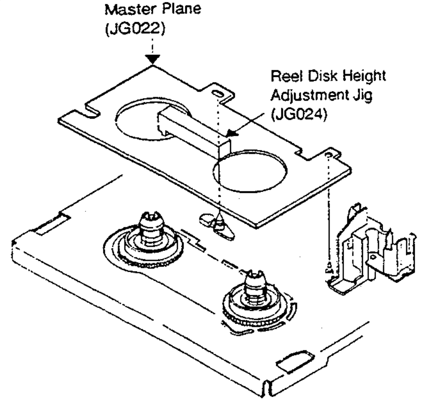

Master Plane
(JG022)
Reel Disk Height
Adjustment Jig
(JG024)

Fig. 1-1-A

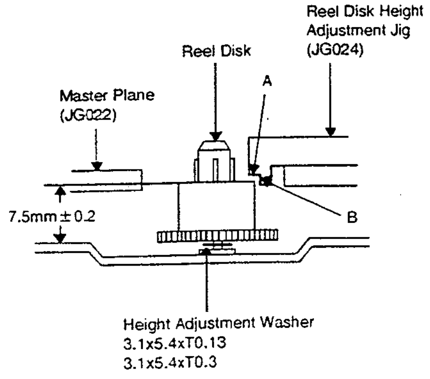

Reel Disk Height
Adjustment Jig
(JG024)
Reel Disk
A
Master Plane
(JG022)
7.5mm±0.2
B
Height Adjustment Washer
3.1x5.4xT0.13
3.1x5.4xT0.3

Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Turn on the power and set to the PLAY mode adjust the Tension Adjust so that the Tension Post is at the position of 0.3mm~0.5mm from the Rib. **(Refer to Fig. 1-2)**
2. Confirm that the video tape is not curling at the flange of P1 post or is not running on flanges.

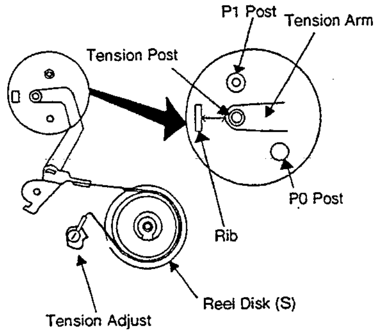

P1 Post
Tension Arm
Tension Post
P0 Post
Rib
Reel Disk (S)
Tension Adjust

Fig. 1-2

1-3: CONFIRMATION AND ADJUSTMENT OF BACK TENSION ON PLAYBACK

1. Load a video tape recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3.** Confirm the value is within 20~27gr/cm at this time.

※ IN CASE OF USING A CASSETTE TYPE TORQUE TAPE.

1. After adjustment, confirm and adjust the tension post position **(Refer to item 1-2)** for the tension arm, install the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the left hand side tension value of the torque tape is 25~38gr/cm for the standard mode tape.

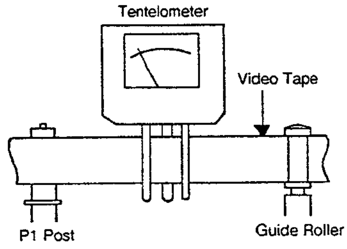

Tentelometer
Video Tape
P1 Post
Guide Roller

Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF FAST FORWARD TORQUE

1. Set torque gauge **(JG002G)** on take-up reel disk, and place unit in FAST FORWARD mode. **(Refer to Fig. 1-4)**
2. Confirm that torque is more than 400gr/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place.
Push the FAST FORWARD button and the reel disk will begin to turn.

1-5: CONFIRMATION OF REWIND TORQUE

1. Operate within 4 or 5 seconds after the reel disk begins to turn.
2. Set torque gauge **(JG002G)** on supply reel disk, and place the unit in REWIND mode. **(Refer to Fig 1-4).**
3. Confirm that torque is more than 400gr/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place.
Push the REWIND button and the reel disk will begin to turn.

1-6: CONFIRMATION OF REEL BRAKE TORQUE

(Take-Up Reel Brake) **(Refer to Fig. 1-4)**

1. Set to STOP mode.
2. Set the torque gauge **(JG002G)** to the take-up reel and turn it counterclockwise.
3. Confirm that it is more than 200gr/cm at that time.

(Supply Reel Brake) **(Refer to Fig. 1-4)**

1. Set to STOP mode.
2. Set the torque gauge **(JG002G)** to the supply reel and turn it clockwise.
3. Confirm that it is more than 200gr/cm at that time.

NOTE

Separate the idler from the reel and confirm the brake torque.

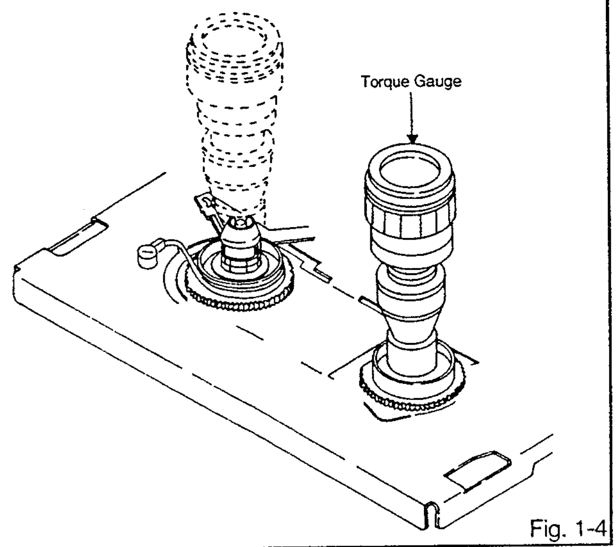


Fig. 1-4

NOTE

If the torque value checked is out of tolerance, replace the appropriate parts as follows.

Check Items	Replace Parts
1-4	Idler Ass'y or Clutch ASS'Y
1-5	Idler Ass'y or Clutch ASS'Y
1-6	Main Brake T Ass'y or Main Brake S Ass'y

2. TAPE RUNNING CONFIRMATION AND ADJUSTMENT

Tape running is adjusted precisely at the factory.
Normally, it is not necessary to make adjustments.
It is necessary to confirm and make adjustments when the parts of the tape running mechanism are replaced because of extensive usage or failure.

2-1: GUIDE ROLLER

1. Connect CH-1 on the oscilloscope to **TP4002 (PB Envelope)** and CH-2 to **TP4006 (SW Pulse).**
2. Set the tracking to manual center position in the following way. Hold and press the tracking auto button more than 2 seconds to set the tracking to center position.
3. Trigger with SW pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
4. Adjust the guide roller height while observing the envelope, and make the envelope flat. Adjust the envelope so that the flatness will not be affected even when the tracking control button is pressed. (Use the adjustment screwdriver **JG005**).
5. Press and hold the tracking control button and (at the point that the envelope waveform starts to reduce) adjust the envelope so that the A : B ratio is better than 3 : 2. **(Refer to Fig. 2-1-B)**
6. Adjust the PG shifter **(ELECTRICAL ADJUSTMENTS : ITEM 3-1)** in the PLAY mode.

NOTE

After adjustment, confirm and adjust A/C head tilt. **(Refer to item 2-2)**

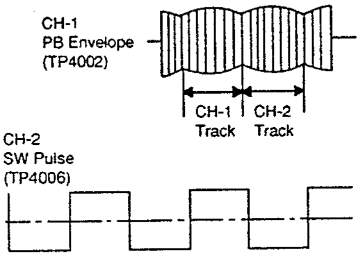


Fig. 2-1-A

MECHANICAL ADJUSTMENTS

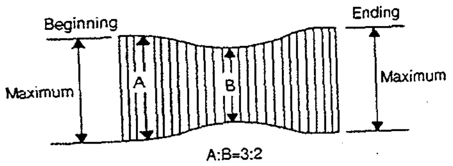


Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF A/C HEAD TILT

When the tape is running abnormally, perform the following adjustments.

1. Insert a new tape and play it back.
2. Confirm that there is no crease on the tape between the P4 post and guide roller (R) and the tape is running smoothly. (It is absolutely impossible to get satisfactory sound if the tape is distorted between the A/C head and P4 post.)
3. If the tape still does not run smoothly, turn the screw ① and adjust the tilt of the A/C head. **(Refer to Fig. 2-2)**

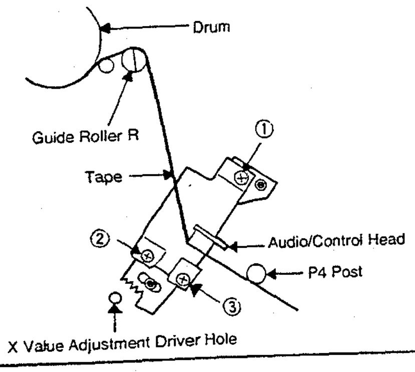


Fig.2-2

2-3: ADJUSTMENT OF A/C HEAD HEIGHT AND AZIMUTH

1. Playback a VHS alignment tape **(JG001E)** and observe the waveform at the audio output terminal.
2. Turn the screw ② slowly to change the azimuth of the A/C head. Adjust the height so that the audio output becomes maximum. **(Refer to Fig. 2-2)**
3. Adjust the screw ③, **(Refer to Fig. 2-2)** until the height of the A/C head reaches the position against the tape as shown in **Fig. 2-3.**
4. When the control head height is not fit. (When you must turn the screw more than 45 degrees), Turn all of the screws ①, ② and ③ to the same degrees.
   Then confirm the angle of the audio/control head and adjust again.

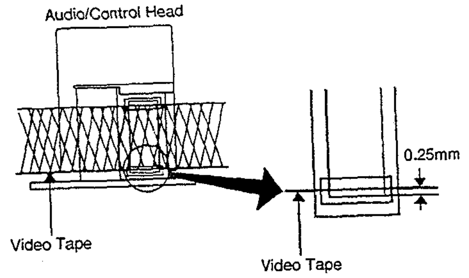


Fig. 2-3

2-4: TAPE RUNNING ADJUSTMENT

1. Adjust the height of reel disk.
   (Refer to item 1-1)
2. Confirm and adjust tension post position.
   (Refer to item 1-2)
3. Adjust the guide roller.
   (Refer to item 2-1)
4. Adjust the A/C head tilt.
   (Refer to item 2-2)
5. Adjust the A/C head height and azimuth.
   (Refer to item 2-3)
6. Connect CH-1 on the oscilloscope to **TP4002** and CH-2 to **TP4006.** Playback the VHS alignment tape **(JG001E).** Set the tracking to manual center. Adjust X with the screw driver for X **(JG153)** as the **Fig. 2-1-A** and **Fig. 2-1-B. (Refer to No. 2 of the item 2-1).**

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

Inferior silicon grease can damage IC's and transistors. When replacing IC's and transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

1-1: Prepare the following measurement and servicing tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. Sweepmarker Generator
4. Color Bar Generator
5. Photo Sensor Amp
6. Oscillator
7. Frequency Counter
8. Alignment Tape (**JG001E**) or Similar

2. BASIC ADJUSTMENTS

On-Screen Display Adjustment

1. Set the volume level to minimum after unplugging the power cord from the AC source more than 1 hour in order to set the unit to the reset mode.
2. Press the VOL. DOWN key on the set and the 9 key on the remote control simultaneously to display the adjustment mode on the screen as shown in **Fig. 2-1** (TV mode) and **Fig. 2-2** (AUX mode).

NOTE

Use the 1 - 8 keys on the remote control to select the options shown in **Fig. 2-1** and **Fig. 2-2**.
Press the 8 key to end the adjustments.

ADJUSTMENT MODE (TV)
1. AGC/BRI/COL AUTO
2. SUB BRIGHT AUTO
3. AGC MANUAL
4. COLOR MANUAL
5.
6. BRIGHT MANUAL
7. V. SIZE MANUAL
8. END

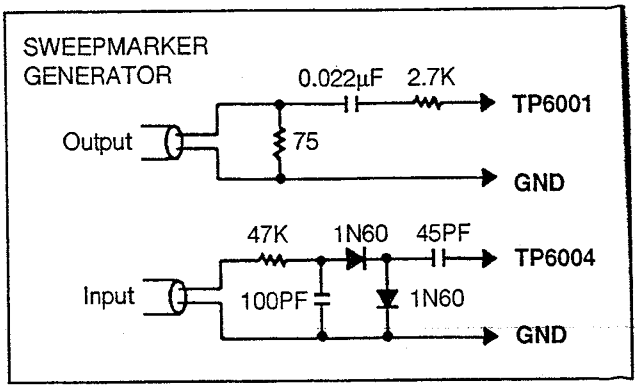
Fig. 2-1

ADJUSTMENT MODE (AU)
1. /BRI/COL AUTO
2. SUB BRIGHT AUTO
3.
4. COLOR MANUAL
5.
6. BRIGHT MANUAL
7.
8. END

Fig. 2-2

2-1: TRAP

1. Connect input and output terminals of the sweepmarker generator to the circuit as shown below.



3. Adjust **L6003** until the waveform marker (31.9MHz) becomes peak. (Refer to **Fig. 2-3**)

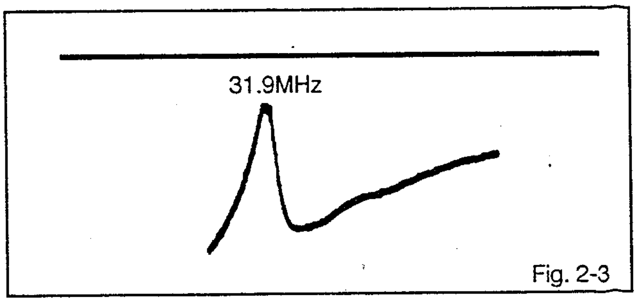


Fig. 2-3

2-2: VCO

1. Connect the oscillator (38.9 MHz) to **TP6001**.
2. Connect the DC voltmeter to **TP6004**.
3. Adjust **L6006** so that the voltage is equal to 2.5 ± 0.1V.

2-3: RF AGC

1. Receive the E-11CH (80dB).
2. Connect the DC voltmeter to **TP6003**.
3. Activate the adjustment mode display (**Fig. 2-1**) and press the 3 key.
4. Press the VOL. UP/DOWN key on the remote control so that the voltage is equal to 3.5 ± 0.1V.

2-4: HUE DL.

1. Receive the color bar pattern.
2. Connect the oscilloscope to **TP7005** through the prove 10:1.
3. Adjust **L7002** and **L7004** so that the width of waveform point (A) becomes minimum. (Refer to **Fig. 2-4**)
4. Adjust **VR7001** so that the width of waveform point (B) is 0.
5. Adjust **L7002** and **L7004** so that the width of waveform point (A) is 0.
6. Adjust **VR7001** so that the width of waveform point (B) is 0 again.

ELECTRICAL ADJUSTMENTS

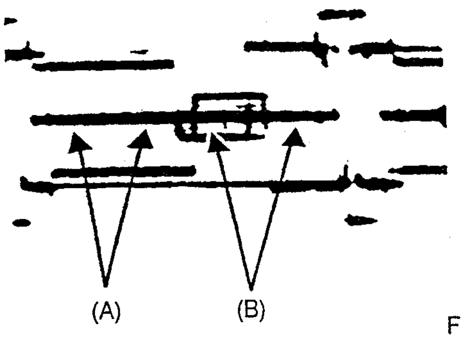


Fig. 2-4

2-5-A: SUB BRIGHT (AUX)

1. Connect the oscilloscope to **TP7004** through the prove 10:1.
2. Receive the color bar pattern (Chroma Off, Burst Off, Audio Video Input).
3. Activate the adjustment mode display (**Fig. 2-2**) and press the 6 key.
4. Press the VOL. UP/DOWN key on the remote control until the waveform point (A) becomes 5.0 ± 0.1Vp-p. (Refer to **Fig. 2-5**)

2-5-B: SUB BRIGHT (TV)

1. Connect the oscilloscope to **TP7004** through the prove 10:1.
2. Receive the color bar pattern (Chroma Off, Burst Off, RF Input).
3. Activate the adjustment mode display (**Fig. 2-1**) and press the 6 key.
4. Press the VOL. UP/DOWN key on the remote control until the waveform point (A) becomes 5.0 ± 0.1Vp-p. (Refer to **Fig. 2-5**)

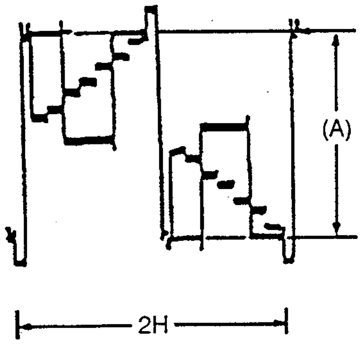


Fig. 2-5

2-6: SUB CONTRAST

1. Connect the oscilloscope to **TP7004** through the prove 10:1.
2. Receive the color bar pattern (Chroma Off, Burst Off).
3. Adjust the **VR7005** until the waveform point (A) becomes 3.5 ± 0.1Vp-p. (Refer to **Fig. 2-6**)

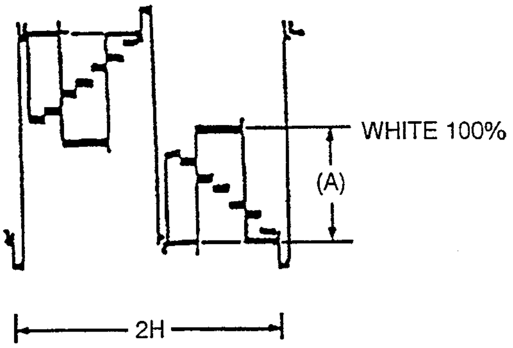


Fig. 2-6

2-7-A: SUB COLOR (AUX)

1. Connect the oscilloscope to **TP7003** through the prove 10:1.
2. Receive the color bar pattern (Audio Video Input).
3. Activate the adjustment mode display (**Fig. 2-2**) and press the 4 key.
4. Press the VOL. UP/DOWN key on the remote control until the waveform point (A) becomes 0.0 ± 0.1Vp-p. (Refer to **Fig. 2-7**)

2-7-B: SUB COLOR (TV)

1. Connect the oscilloscope to **TP7003** through the prove 10:1.
2. Receive the color bar pattern (RF Input).
3. Activate the adjustment mode display (**Fig. 2-1**) and press the 4 key.
4. Press the VOL. UP/DOWN key on the remote control until the waveform point (A) becomes 0.0 ± 0.1Vp-p. (Refer to **Fig. 2-7**)

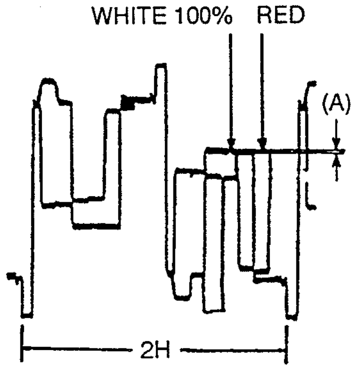


Fig. 2-7

2-8: H. SYNC VCO

1. Connect the frequency counter to **TP8003**.
2. Adjust the **VR8001** so that the frequency is equal to 15625 Hz.

ELECTRICAL ADJUSTMENTS

2-9: V. COM

1. Receive the color bar pattern (Chroma Off, Burst Off, Video level 0.1Vp-p, Sync level 0.3Vp-p, Audio Video Input).
2. Keep the unit as it is more than 10 minutes
3. Connect the output of the photo sensor amp to the oscilloscope.
4. Adjust the **VR8002** until the waveform point (A) becomes minimum. (Refer to **Fig. 2-8**)

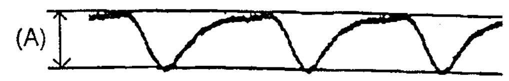


Fig. 2-8

2-10: PG SHIFTER (HEAD SWITCHING)

1. Playback the alignment tape (**JG001E**) or similar.
2. Set the volume level to minimum after unplugging the power cord from the AC source more than 1 hour in order to set the unit to the reset mode.
3. Press the VOL. DOWN key on the set and the 3 key on the remote control simultaneously until the indicator REC/OTR disappears. If the indicator REC/OTR disappears, adjustment is completed.

(If the REC/OTR indicator is still illuminated)

1. Connect CH-1 on the oscilloscope to **TP4003** and CH-2 to **TP7002.**
2. Playback the alignment tape (**JG001E**) or similar.
4. Press the VOL. DOWN key on the set and the 4 key on the remote control simultaneously.
5. Press the Tracking +/- key on the remote control so that the waveform of the oscilloscope measures 6.5±0.5 (H) at both leading and trailing edges. (Refer to **Fig. 2-9-A, B**)
6. Press the Tracking Auto key on the remote control.

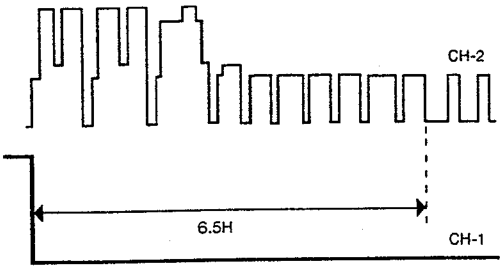


Fig. 2-9-A

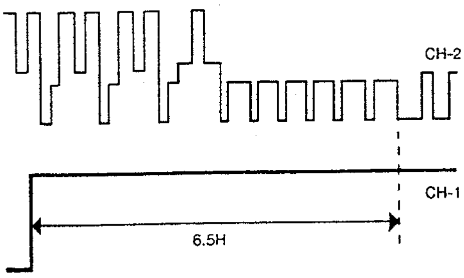
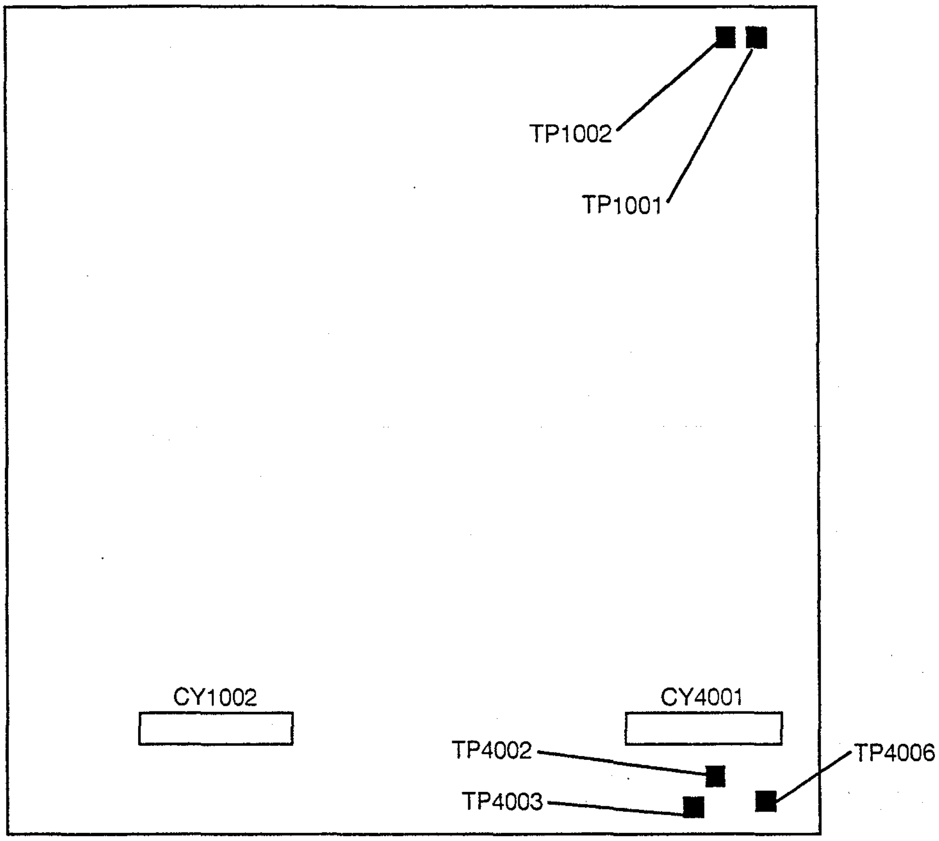
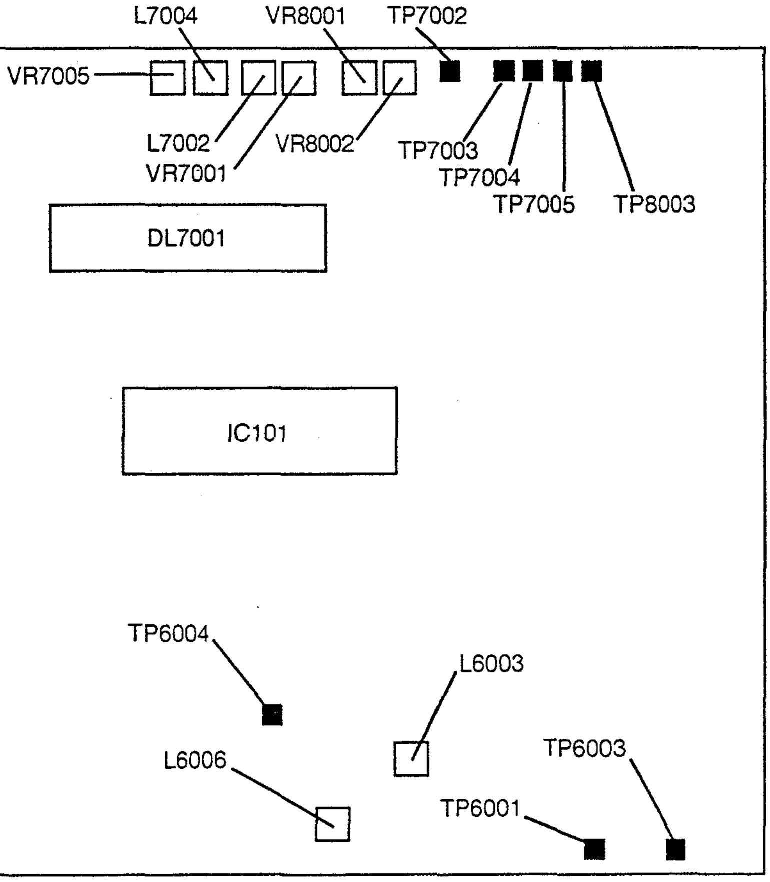


Fig. 2-9-B

MAJOR COMPONENT LOCATION GUIDE

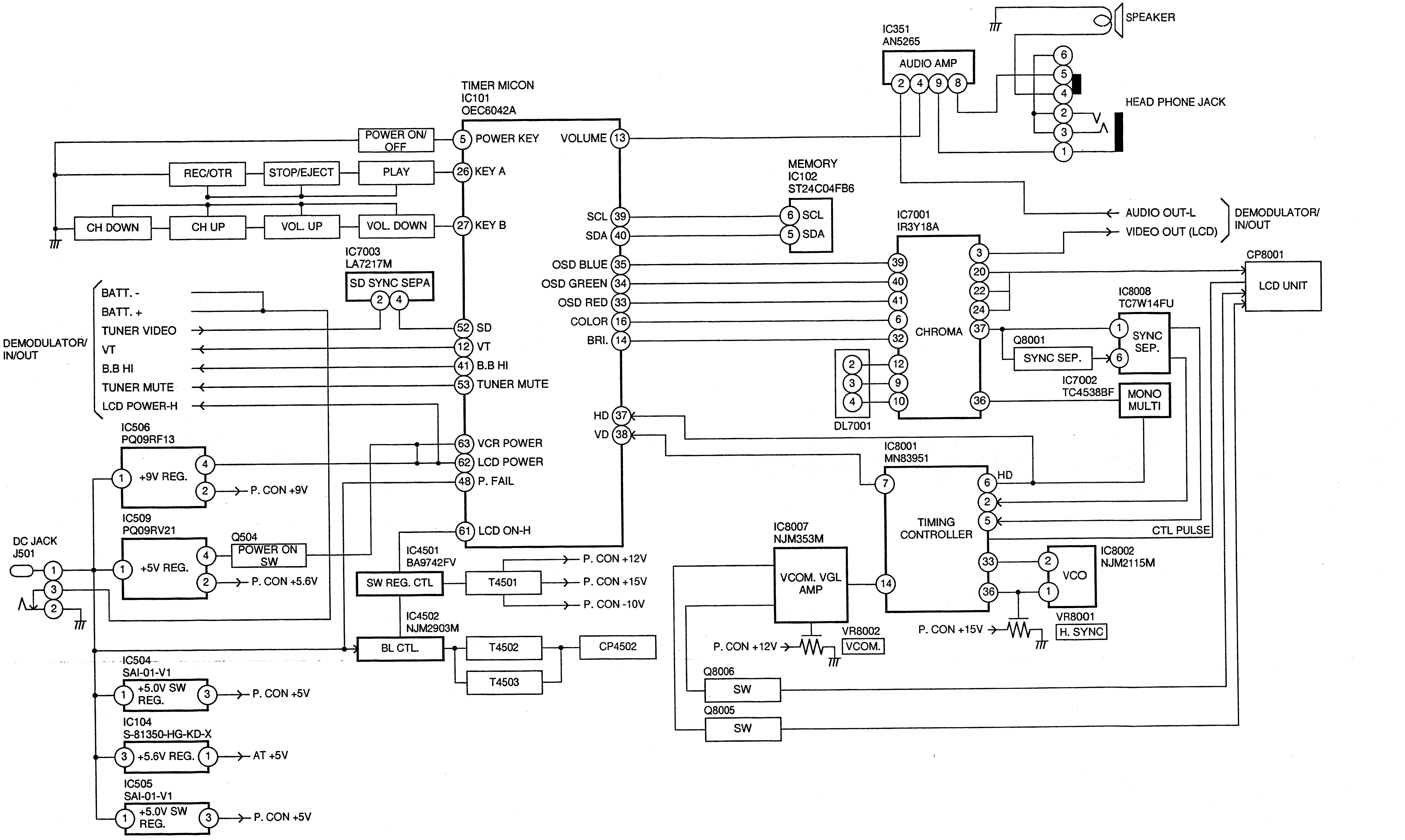

TP1002
TP1001
CY1002
CY4001
TP4002
TP4006
TP4003

MAIN


L7004
VR8001
TP7002
VR7005
L7002
VR7001
VR8002
TP7003
TP7004
TP7005
TP8003
DL7001
IC101
TP6004
L6003
L6006
TP6003
TP6001

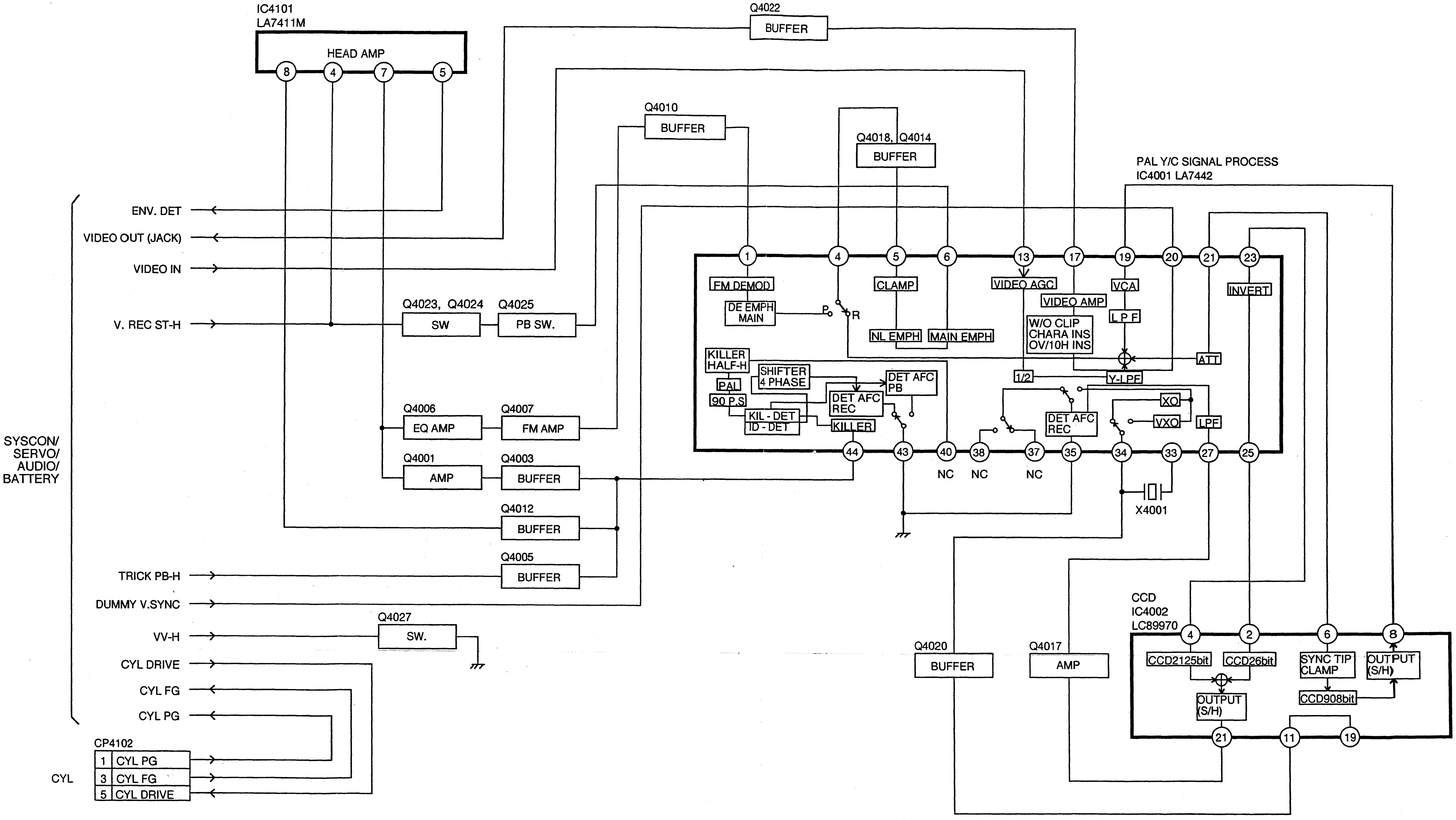
LCD (TOP)

TV BLOCK DIAGRAM


TIMER MICON
IC101
OEC6042A
POWER ON/ OFF
REC/OTR
STOP/EJECT
PLAY
CH DOWN
CH UP
VOL. UP
VOL. DOWN
5 POWER KEY
26 KEY A
27 KEY B
VOLUME 13
SCL 39
SDA 40
OSD BLUE 35
OSD GREEN 34
OSD RED 33
COLOR 16
BRI. 14
HD 37
VD 38
52 SD
12 VT
41 B.B HI
53 TUNER MUTE
63 VCR POWER
62 LCD POWER
48 P. FAIL
61 LCD ON-H
IC7003
LA7217M
SD SYNC SEPA
2
4
DEMODULATOR/ IN/OUT
BATT. -
BATT. +
TUNER VIDEO
VT
B.B HI
TUNER MUTE
LCD POWER-H
IC506
PQ09RF13
+9V REG.
P. CON +9V
IC509
PQ09RV21
+5V REG.
Q504
POWER ON SW
P. CON +5.6V
DC JACK
J501
IC4501
BA9742FV
SW REG. CTL
T4501
P. CON +12V
P. CON +15V
P. CON -10V
IC4502
NJM2903M
BL CTL.
T4502
T4503
CP4502
IC504
SAI-01-V1
+5.0V SW REG.
P. CON +5V
IC104
S-81350-HG-KD-X
+5.6V REG.
AT +5V
IC505
SAI-01-V1
+5.0V SW REG.
P. CON +5V
IC351
AN5265
AUDIO AMP
2 4 9 8
SPEAKER
HEAD PHONE JACK
6 5 4 2 3 1
MEMORY
IC102
ST24C04FB6
6 SCL
5 SDA
AUDIO OUT-L
VIDEO OUT (LCD)
DEMODULATOR/ IN/OUT
IC7001
IR3Y18A
CHROMA
39 40 41 6 32 12 9 10
3 20 22 24 37 36
DL7001
2 3 4
CP8001
LCD UNIT
IC8008
TC7W14FU
SYNC SEP.
Q8001
SYNC SEP.
IC7002
TC4538BF
MONO MULTI
IC8001
MN83951
TIMING CONTROLLER
7 14 6 HD 2 5 33 36
CTL PULSE
IC8007
NJM353M
VCOM. VGL AMP
IC8002
NJM2115M
VCO
VR8001
H. SYNC
P. CON +15V
VR8002
VCOM.
P. CON +12V
Q8006
SW
Q8005
SW

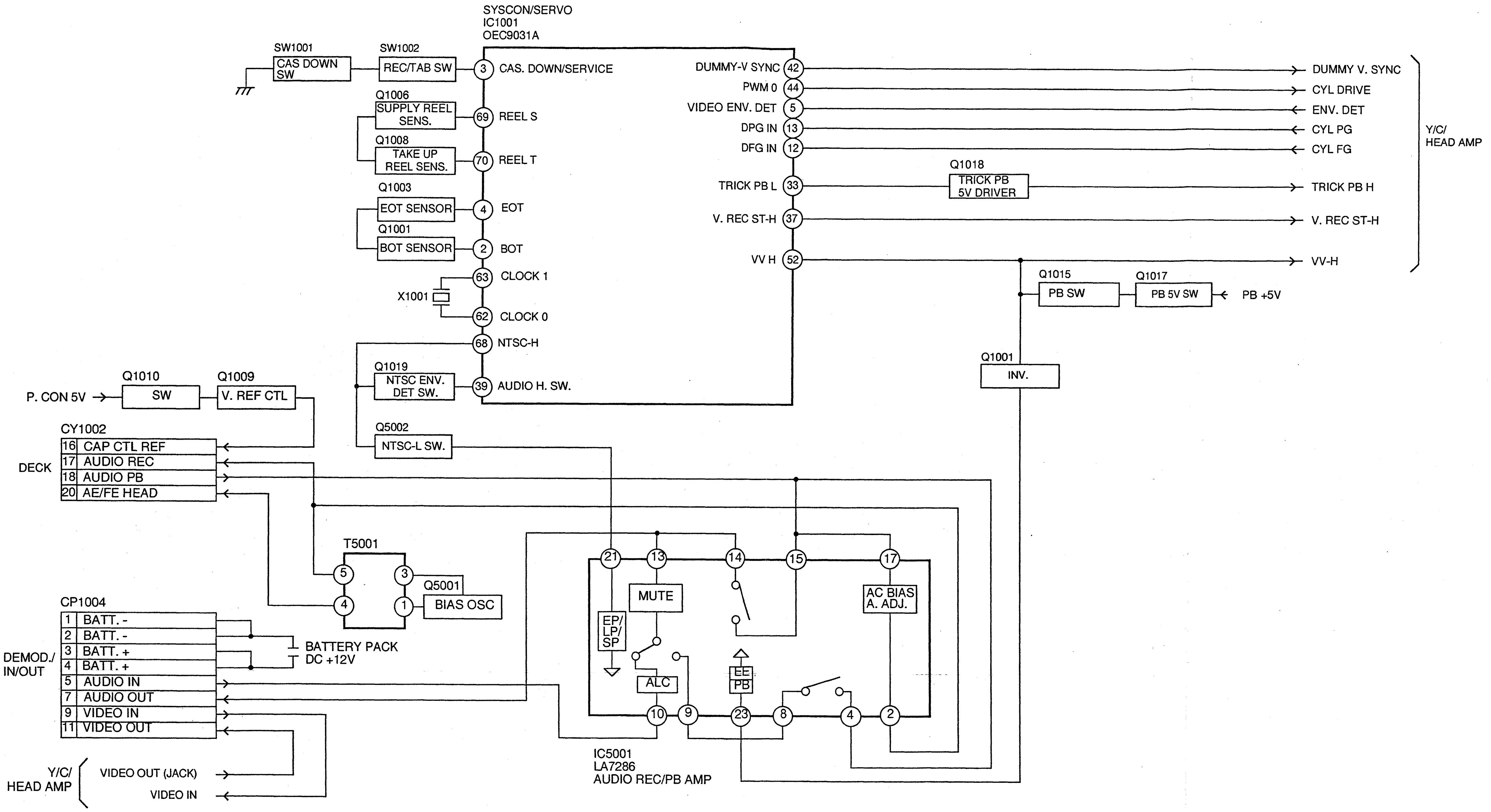
3-5279

Y/C⁄HEAD AMP BLOCK DIAGRAM


IC4101
LA7411M
HEAD AMP
8
4
7
5
Q4022
BUFFER
Q4010
BUFFER
Q4018, Q4014
BUFFER
PAL Y/C SIGNAL PROCESS
IC4001 LA7442
ENV. DET
VIDEO OUT (JACK)
VIDEO IN
V. REC ST-H
Q4023, Q4024
SW
Q4025
PB SW.
Q4006
EQ AMP
Q4007
FM AMP
Q4001
AMP
Q4003
BUFFER
Q4012
BUFFER
Q4005
BUFFER
SYSCON/
SERVO/
AUDIO/
BATTERY
TRICK PB-H
DUMMY V.SYNC
VV-H
Q4027
SW.
CYL DRIVE
CYL FG
CYL PG
CP4102
1 CYL PG
3 CYL FG
5 CYL DRIVE
CYL
1
4
5
6
13
17
19
20
21
23
FM DEMOD
DE EMPH
MAIN
P
R
CLAMP
NL EMPH
MAIN EMPH
VIDEO AGC
VIDEO AMP
W/O CLIP
CHARA INS
OV/10H INS
VCA
L P F
INVERT
ATT
Y-LPF
1/2
KILLER
HALF-H
PAL
90 P.S
SHIFTER
4 PHASE
DET AFC
PB
DET AFC
REC
KIL - DET
ID - DET
KILLER
DET AFC
REC
XO
VXO
LPF
44
43
40
38
37
35
34
33
27
25
NC
NC
NC
X4001
Q4020
BUFFER
Q4017
AMP
CCD
IC4002
LC89970
4
2
6
8
CCD2125bit
CCD26bit
SYNC TIP
CLAMP
OUTPUT
(S/H)
CCD908bit
OUTPUT
(S/H)
21
11
19

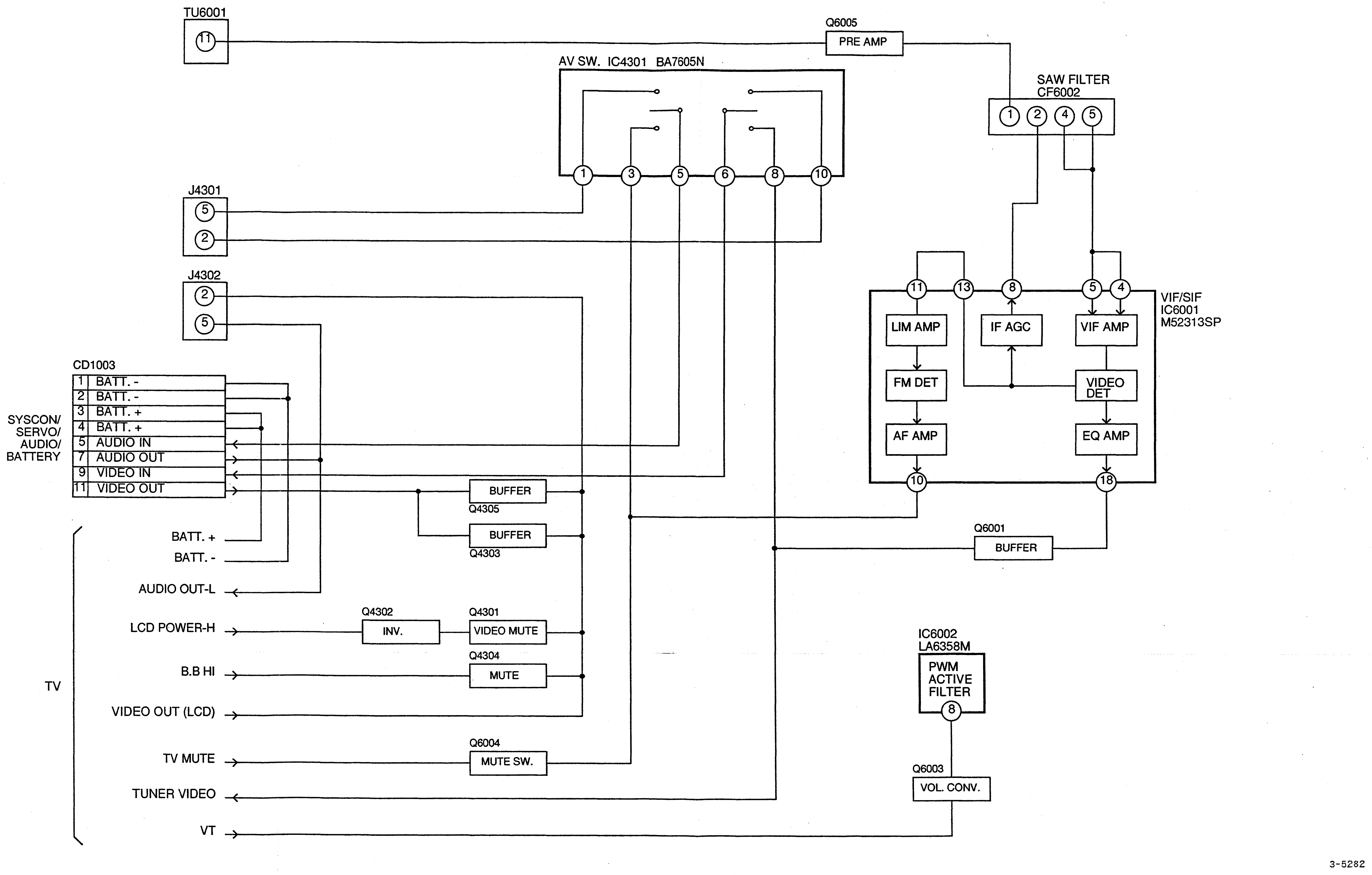
3-5280

SYSTEM CONTROL／SERVO／AUDIO／BATTERY BLOCK DIAGRAM


SYSCON/SERVO
IC1001
OEC9031A
SW1001
CAS DOWN SW
SW1002
REC/TAB SW
3 CAS. DOWN/SERVICE
Q1006
SUPPLY REEL SENS.
69 REEL S
Q1008
TAKE UP REEL SENS.
70 REEL T
Q1003
EOT SENSOR
4 EOT
Q1001
BOT SENSOR
2 BOT
63 CLOCK 1
X1001
62 CLOCK 0
68 NTSC-H
Q1019
NTSC ENV. DET SW.
39 AUDIO H. SW.
Q5002
NTSC-L SW.
DUMMY-V SYNC 42
PWM 0 44
VIDEO ENV. DET 5
DPG IN 13
DFG IN 12
TRICK PB L 33
V. REC ST-H 37
VV H 52
Q1018
TRICK PB 5V DRIVER
DUMMY V. SYNC
CYL DRIVE
ENV. DET
CYL PG
CYL FG
TRICK PB H
V. REC ST-H
VV-H
Y/C/ HEAD AMP
Q1015
PB SW
Q1017
PB 5V SW
PB +5V
Q1001
INV.
P. CON 5V
Q1010
SW
Q1009
V. REF CTL
CY1002
DECK
16 CAP CTL REF
17 AUDIO REC
18 AUDIO PB
20 AE/FE HEAD
T5001
5
4
3
1
Q5001
BIAS OSC
CP1004
DEMOD./ IN/OUT
1 BATT. -
2 BATT. -
3 BATT. +
4 BATT. +
5 AUDIO IN
7 AUDIO OUT
9 VIDEO IN
11 VIDEO OUT
BATTERY PACK DC +12V
Y/C/ HEAD AMP
VIDEO OUT (JACK)
VIDEO IN
21
13
14
15
17
MUTE
EP/ LP/ SP
ALC
EE PB
AC BIAS A. ADJ.
10
9
23
8
4
2
IC5001
LA7286
AUDIO REC/PB AMP

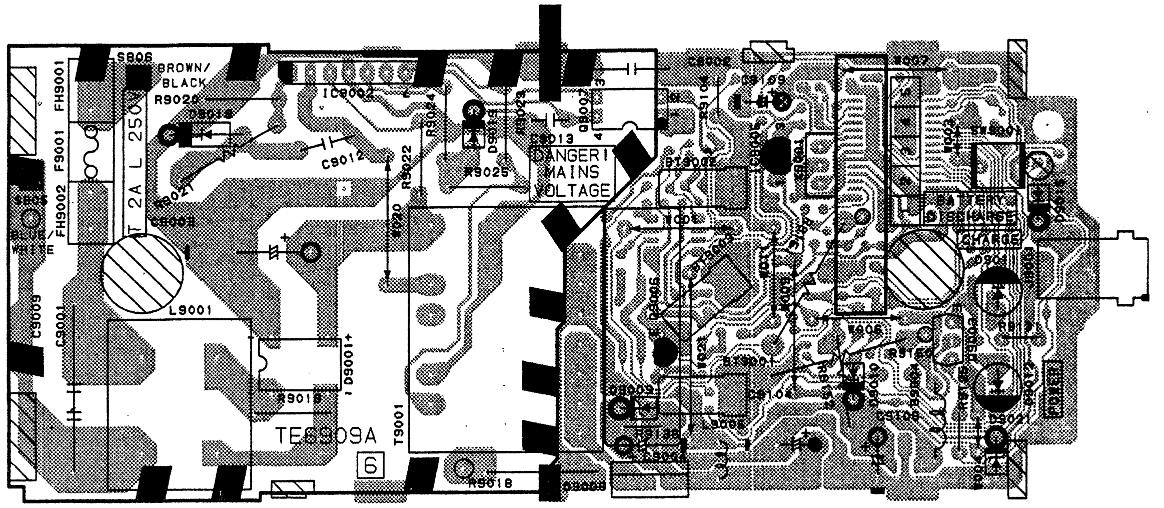
3-5281

DEMODULATOR／IN/OUT JACK BLOCK DIAGRAM

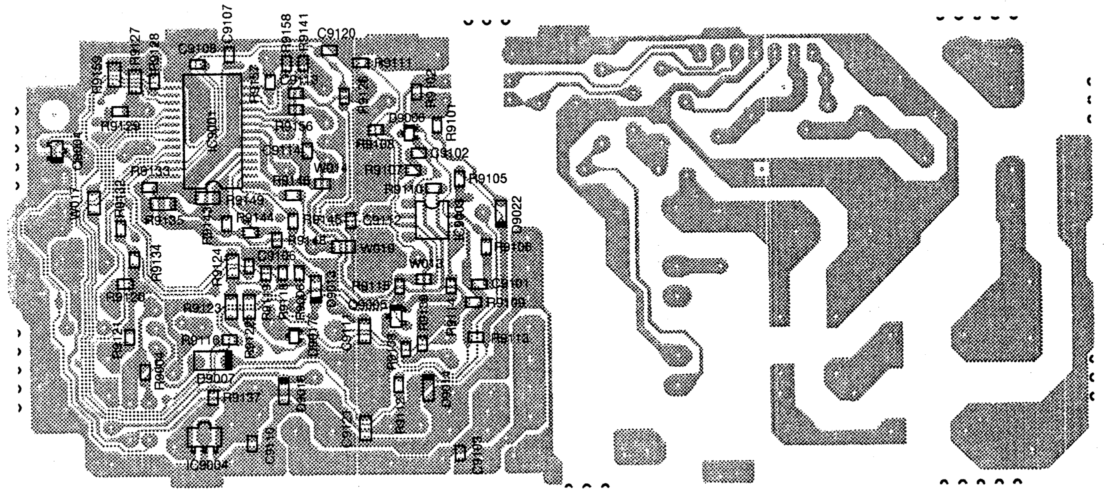

TU6001
11
Q6005
PRE AMP
AV SW. IC4301 BA7605N
1
3
5
6
8
10
SAW FILTER
CF6002
1
2
4
5
J4301
5
2
J4302
2
5
CD1003
SYSCON/
SERVO/
AUDIO/
BATTERY
1 BATT. -
2 BATT. -
3 BATT. +
4 BATT. +
5 AUDIO IN
7 AUDIO OUT
9 VIDEO IN
11 VIDEO OUT
VIF/SIF
IC6001
M52313SP
11
13
8
5
4
LIM AMP
IF AGC
VIF AMP
FM DET
VIDEO DET
AF AMP
EQ AMP
10
18
BUFFER
Q4305
BUFFER
Q4303
Q6001
BUFFER
TV
BATT. +
BATT. -
AUDIO OUT-L
LCD POWER-H
B.B HI
VIDEO OUT (LCD)
TV MUTE
TUNER VIDEO
VT
Q4302
INV.
Q4301
VIDEO MUTE
Q4304
MUTE
Q6004
MUTE SW.
IC6002
LA6358M
PWM
ACTIVE
FILTER
8
Q6003
VOL. CONV.
3-5282

PRINTED CIRCUIT BOARDS

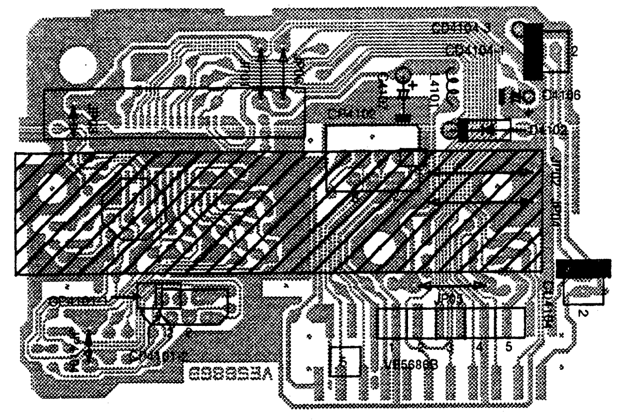
AC ADAPTOR
COMPONENT SIDE


BROWN/
BLACK
R9026
DANGER!
MAINS
VOLTAGE
BLUE/
WHITE
L9001
T9001
TE6909A
6
BATTERY
CHARGE
POWER

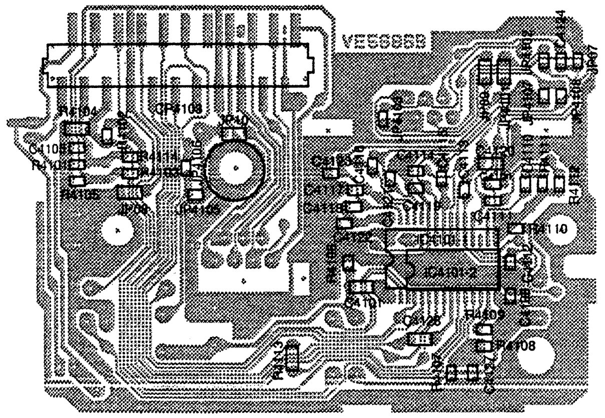
SOLDER SIDE



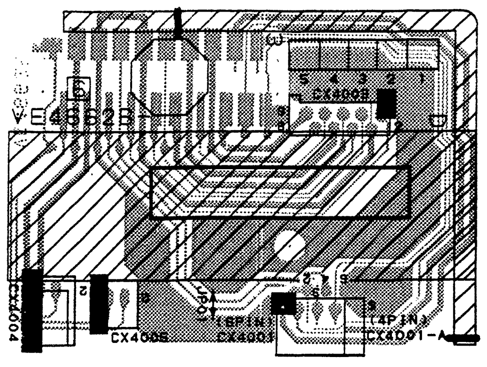
HEAD AMP
COMPONENT SIDE



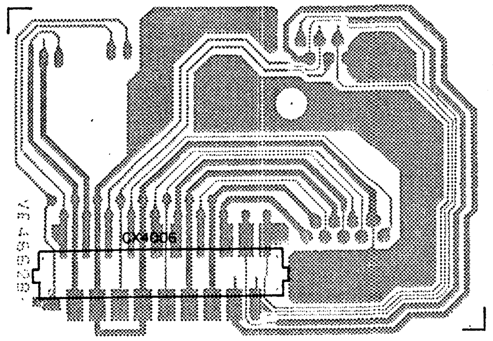
SOLDER SIDE



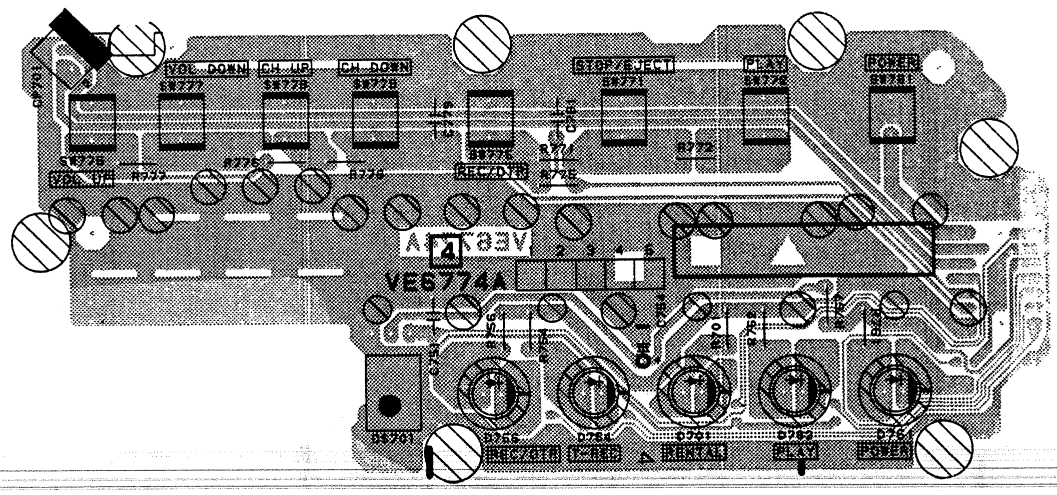
DECK RELAY
COMPONENT SIDE


CX4004
CX4005
CX4003
CX4001
(8PIN)
(4PIN)

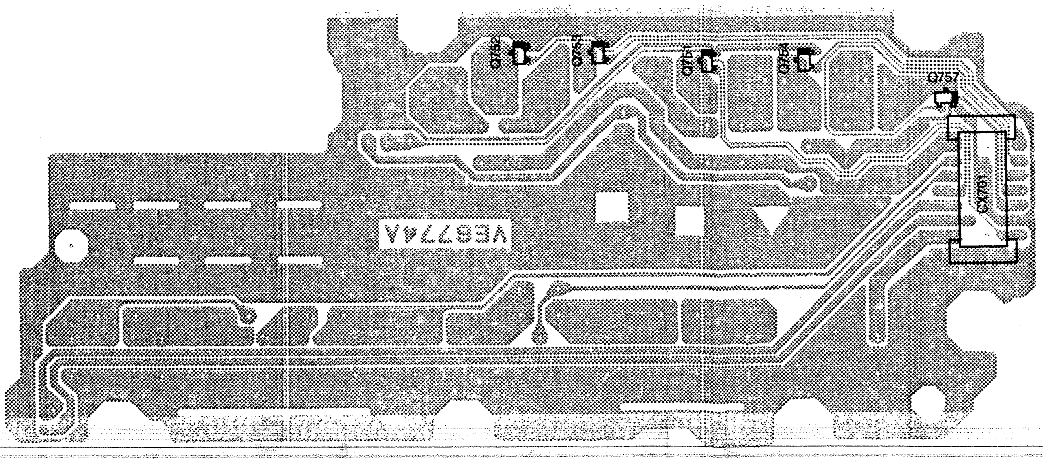
SOLDER SIDE



OPERATION
COMPONENT SIDE


VOL DOWN
CH UP
CH DOWN
STOP/EJECT
PLAY
POWER
VOL UP
REC/OTR
VE6774A
REC/OTR
T-REC
PENTAL
PLAY
POWER

SOLDER SIDE

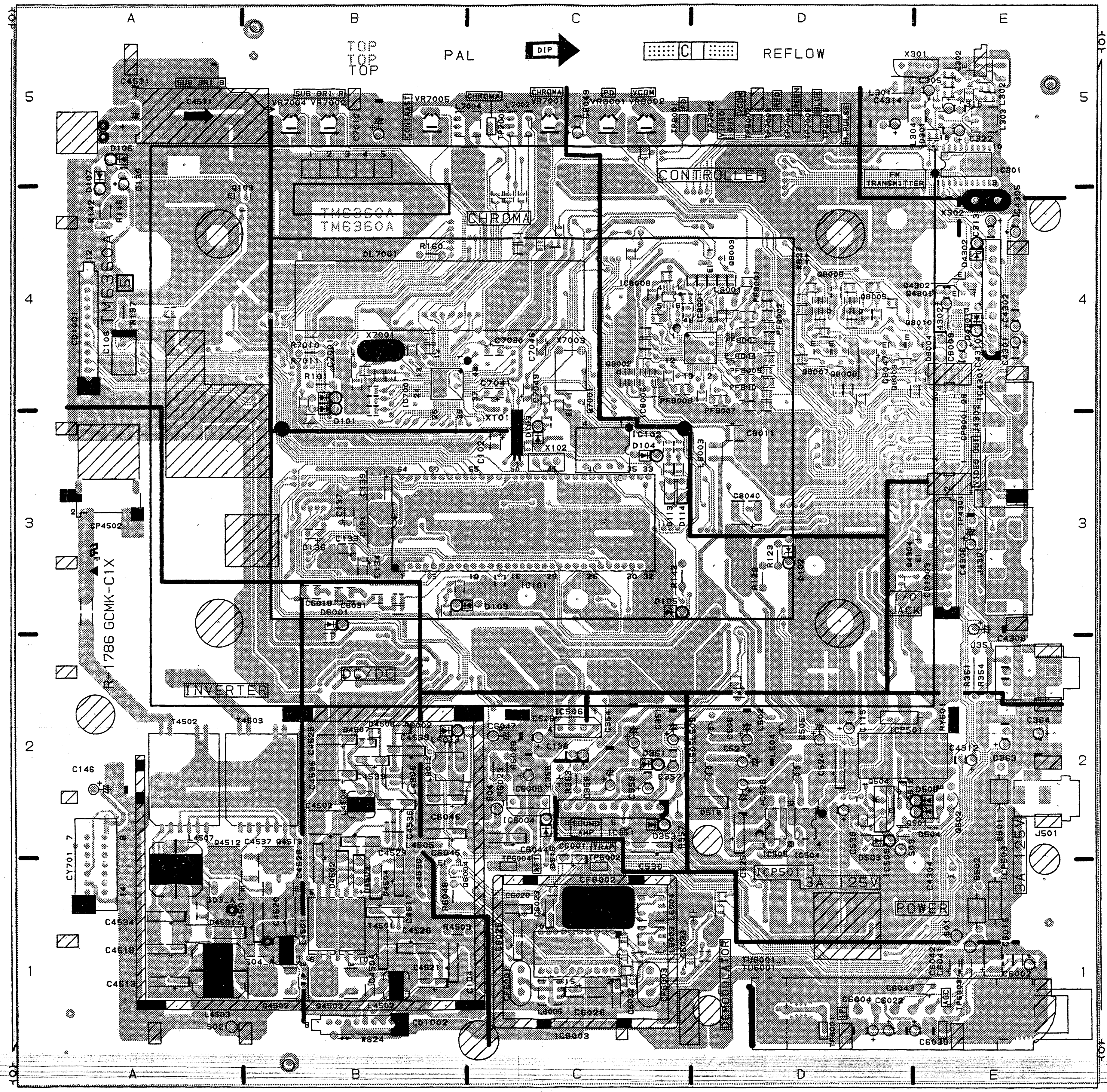

VE6774A
CX701

TV PRINTED CIRCUIT BOARDS

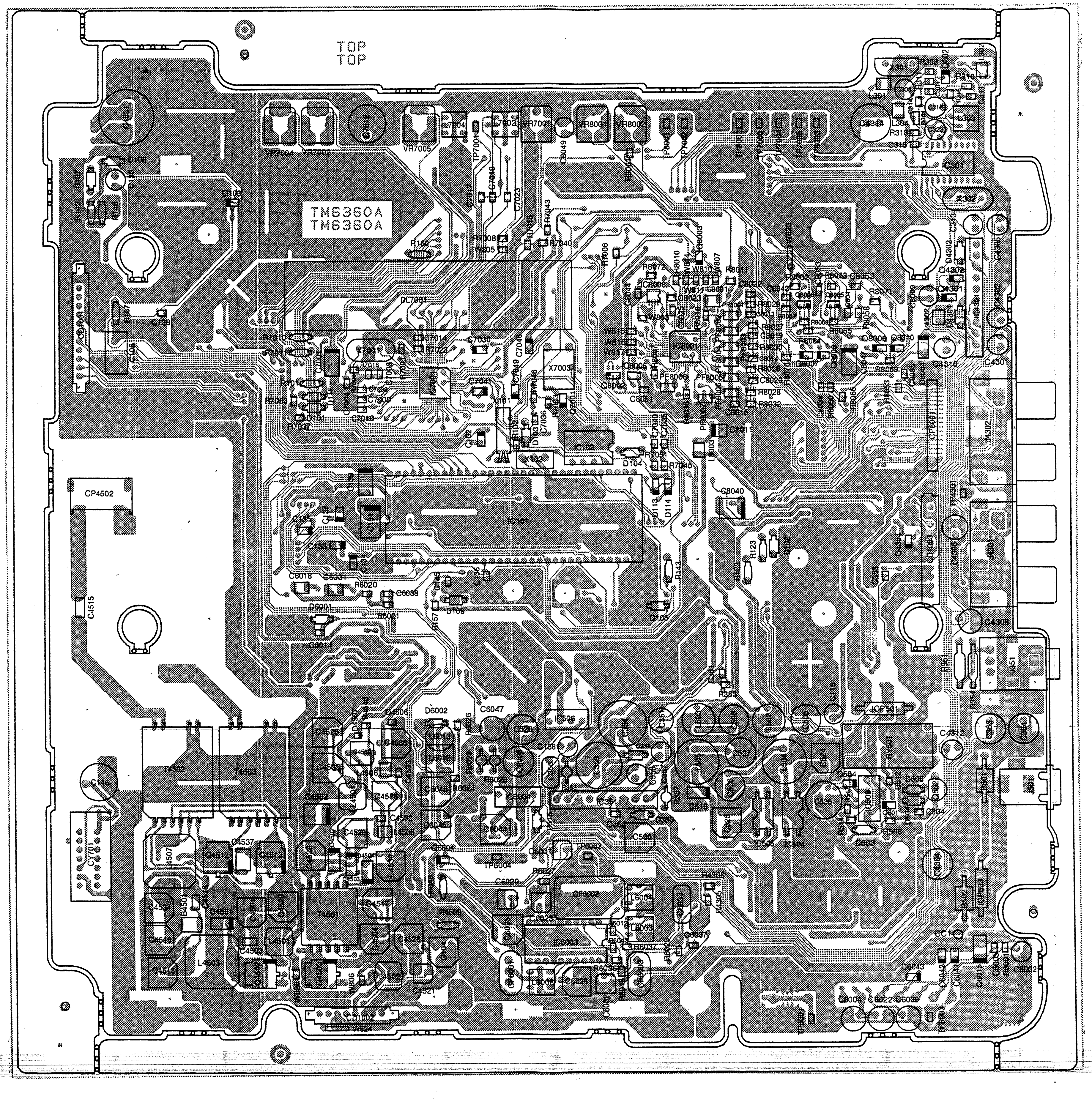
MAIN

TOP

COMPONENT SIDE


A
B
C
D
E
1
2
3
4
5
TOP
PAL
DIP
C
REFLOW
CONTROLLER
CHROMA
TM6360A
R-1786 GCMK-C1X
INVERTER
DC/DC
DEMODULATOR
POWER
3A 125V
FM TRANSMITTER
VIDEO OUT
I/O JACK
SOUND AMP
VR7004
VR7002
VR7005
VR7001
VR8001
VR8002
X2001
X7003
X301
X302
IC101
IC102
IC301
IC501
IC506
IC8003
IC6003
T4502
T4503
T4501
CP4502
CP501
CP1001
CY701
J501
J351
C146
C4534
C4518
C4519
C4531
TU6001

TV PRINTED CIRCUIT BOARDS
MAIN
TOP
SOLDER SIDE

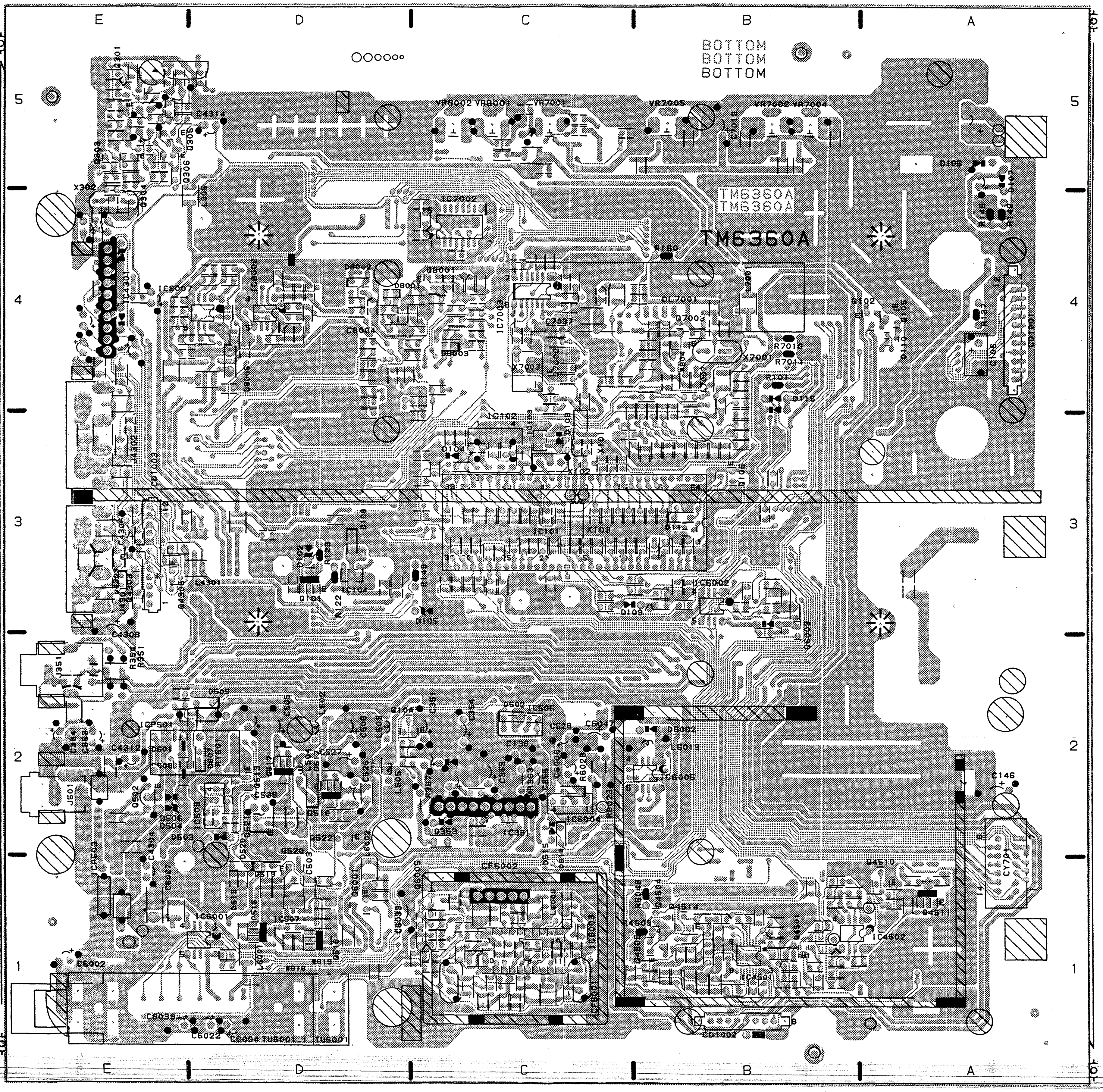

TOP
TM6360A
CP4502
IC101
T4502
T4503
T4501
CP6002
IC6003

TV PRINTED CIRCUIT BOARDS

MAIN

BOTTOM

COMPONENT SIDE

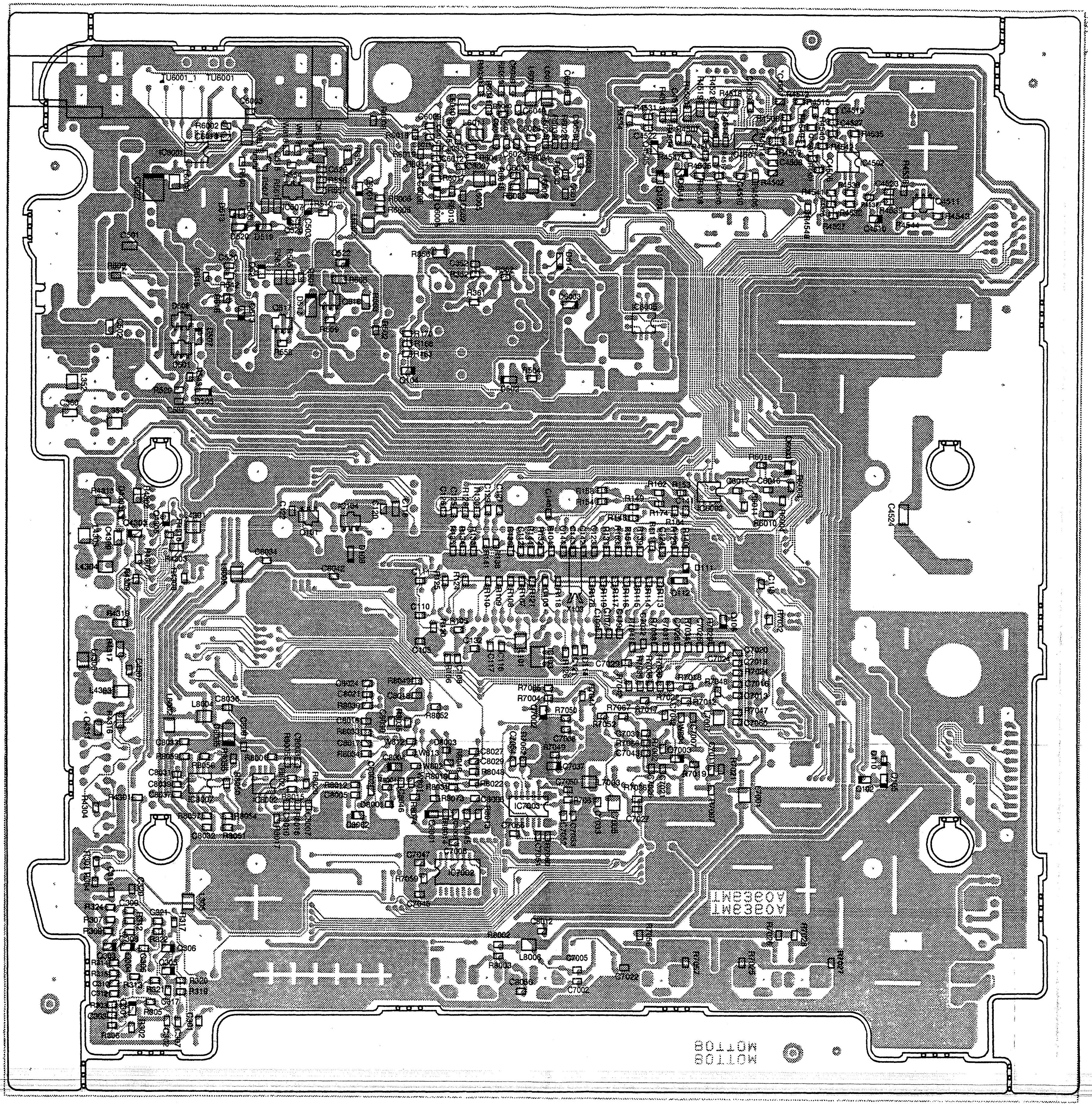

E
D
C
B
A
5
4
3
2
1
BOTTOM
BOTTOM
BOTTOM
TM6360A
TM6360A
TM6360A
VR6002
VR6001
VR7001
VR7005
VR7002
VR7004
C4314
X302
IC7002
IC4301
IC6007
IC6002
D6002
D6001
IC7003
C2037
DL7001
Q7003
X7003
R7010
R7011
X7001
D106
Q102
Q110
CD1001
IC102
Q104
IC101
X103
D102
D101
D105
D103
C4301
C4308
J351
R351
Q505
IC6006
IC6008
IC6002
C4312
IC6005
D6002
C146
J501
Q502
Q503
Q504
Q520
Q521
IC351
IC6004
CF6002
Q4510
Q4511
IC4502
IC4501
R4503
C6002
C6039
C6022
C6004
TUB001
CD1002
CY701
IC6001

TV PRINTED CIRCUIT BOARDS

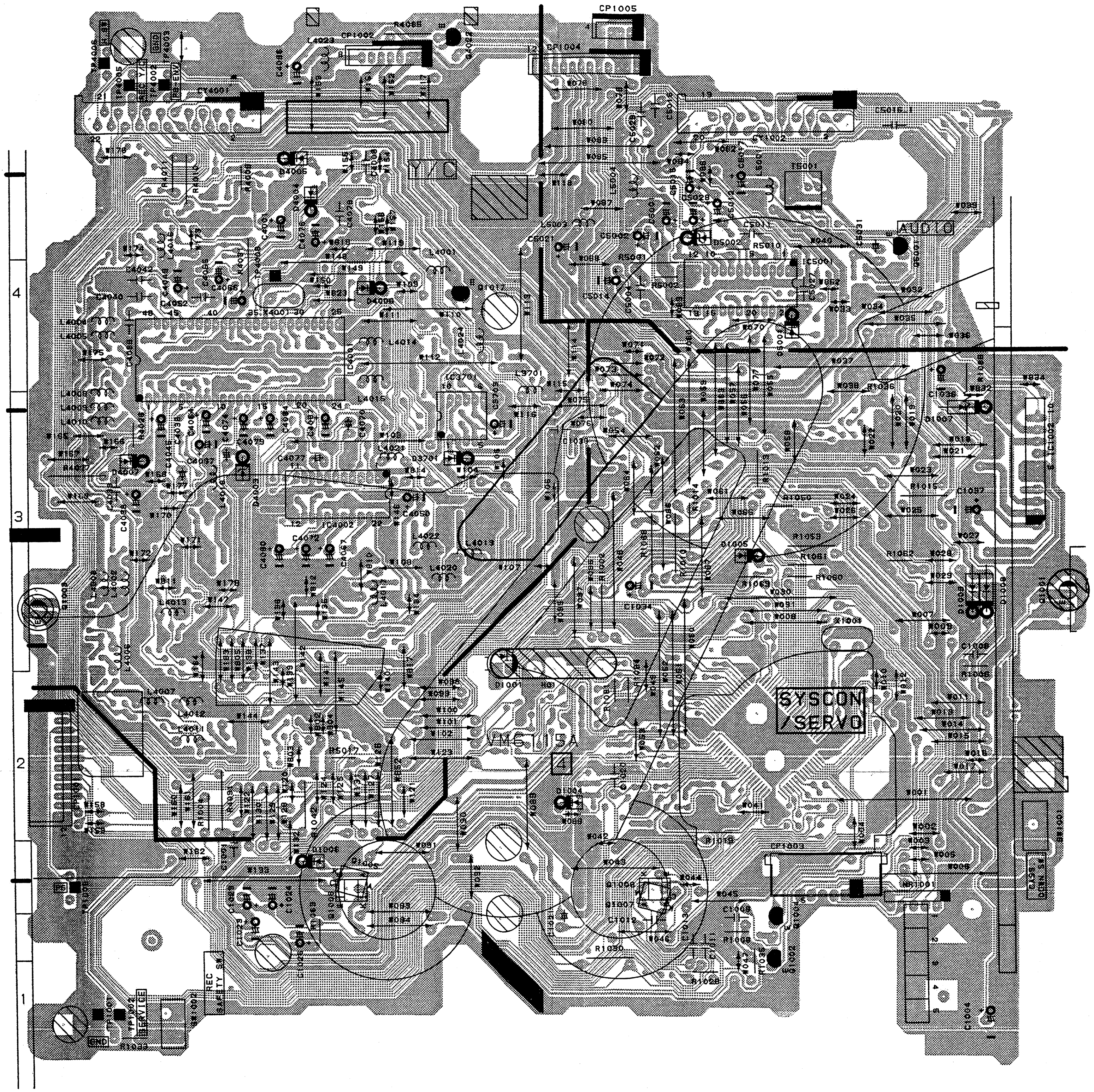
MAIN

BOTTOM

SOLDER SIDE

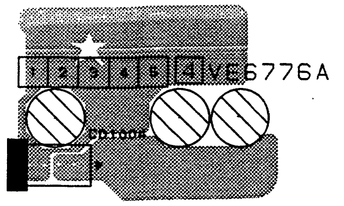

TU6001_1 TU6001
IC7003
IC7002
L8009
C7005
C7002
C7022
C4524
BOTTOM

VCR PRINTED CIRCUIT BOARDS
MAIN
COMPONENT SIDE



CP1005
CP1004
CP4005
Y/C
AUDIO
SYSCON /SERVO
VHS SA
4
3
2
1
REC SAFETY SW
SERVICE
END
CP1003

BATTERY

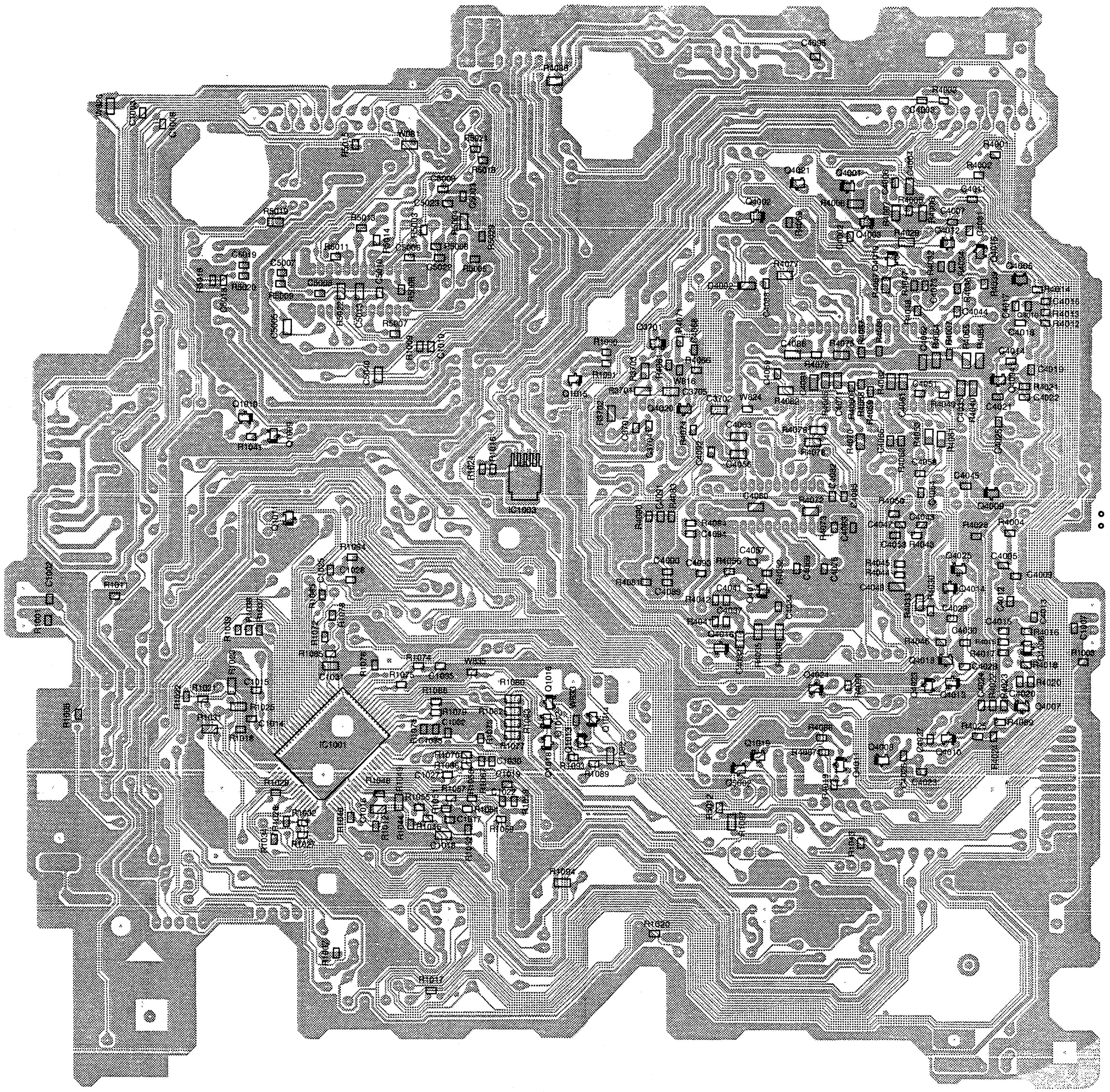


VE6776A
CD1002

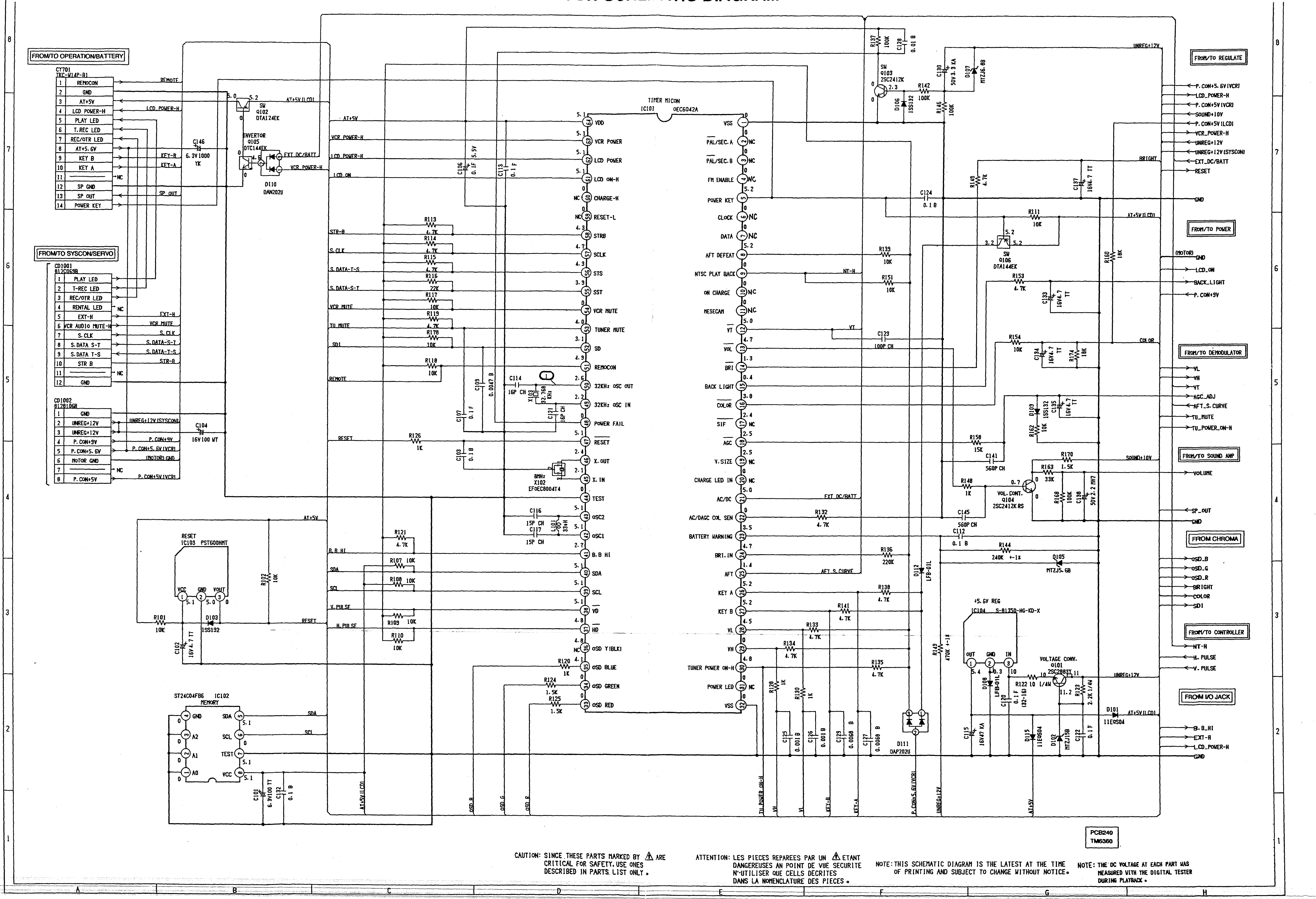
VCR PRINTED CIRCUIT BOARDS

MAIN

SOLDER SIDE



MICON SCHEMATIC DIAGRAM


FROM/TO OPERATION/BATTERY
CY701 TKC-W14P-B1
REMOCON
GND
AT+5V
LCD POWER-H
PLAY LED
T.REC LED
REC/OTR LED
AT+5.6V
KEY B
KEY A
SP GND
SP OUT
POWER KEY
FROM/TO SYSCON/SERVO
CD1001 812C069B
PLAY LED
T-REC LED
REC/OTR LED
RENTAL LED
EXT-H
VCR AUDIO MUTE-H
S.CLK
S.DATA S-T
S.DATA T-S
STR B
GND
CD1002 812B106B
UNREG+12V
P.CON+9V
P.CON+5.6V
MOTOR GND
P.CON+5V
SW Q102 DTA124EK
INVERTOR Q105 DTC144EK
D110 DAN202U
C146 6.3V1000 YK
C104 16V100 WT
RESET IC103 PST600HMT
D103 1SS132
ST24C04FB6 IC102 MEMORY
TIMER MICON IC101 OEC6042A
VDD
VCR POWER
LCD POWER
LCD ON-H
CHARGE-H
RESET-L
STRB
SCLK
STS
SST
VCR MUTE
TUNER MUTE
SD
REMOCON
32KHz OSC OUT
32KHz OSC IN
POWER FAIL
RESET
X.OUT
X.IN
TEST
OSC2
OSC1
B.B HI
SDA
SCL
VD
HD
OSD Y(BLK)
OSD BLUE
OSD GREEN
OSD RED
VSS
PAL/SEC.A
PAL/SEC.B
FM ENABLE
POWER KEY
CLOCK
DATA
AFT DEFEAT
NTSC PLAY BACK
ON CHARGE
MESECAM
VT
VOL
BRI
BACK LIGHT
COLOR
SIF
AGC
Y.SIZE
CHARGE LED IN
AC/DC
AC/DAGC COL SEN
BATTERY WARNING
BRI.IN
AFT
KEY A
KEY B
VL
VH
TUNER POWER ON-H
POWER LED
X103 32.768 KHz
8MHz X102 EFOEC8004T4
L101 33UH
SW Q103 2SC2412K
D107 MTZJ6.8B
SW Q106 DTA144EK
VOL.CONT. Q104 2SC2412KRS
D105 MTZJ5.6B
+5.6V REG IC104 S-81350-HG-KD-X
VOLTAGE CONV. Q101 2SC2883Y
D101 11EQS04
D111 DAP202U
D112 LFB-01L
FROM/TO REGULATE
P.CON+5.6V(VCR)
LCD_POWER-H
P.CON+5V(VCR)
SOUND+10V
P.CON+5V(LCD)
VCR_POWER-H
UNREG+12V
UNREG+12V(SYSCON)
EXT_DC/BATT
RESET
GND
FROM/TO POWER
(MOTOR) GND
LCD_ON
BACK_LIGHT
P.CON+9V
FROM/TO DEMODULATOR
VL
VH
VT
AGC_ADJ
AFT_S.CURVE
TU_MUTE
TU_POWER_ON-H
FROM/TO SOUND AMP
VOLUME
SP_OUT
GND
FROM CHROMA
OSD_B
OSD_G
OSD_R
BRIGHT
COLOR
SD1
FROM/TO CONTROLLER
NT-H
H.PULSE
V.PULSE
FROM I/O JACK
B.B_HI
EXT-H
LCD_POWER-H
GND
PCB240
TM6360

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

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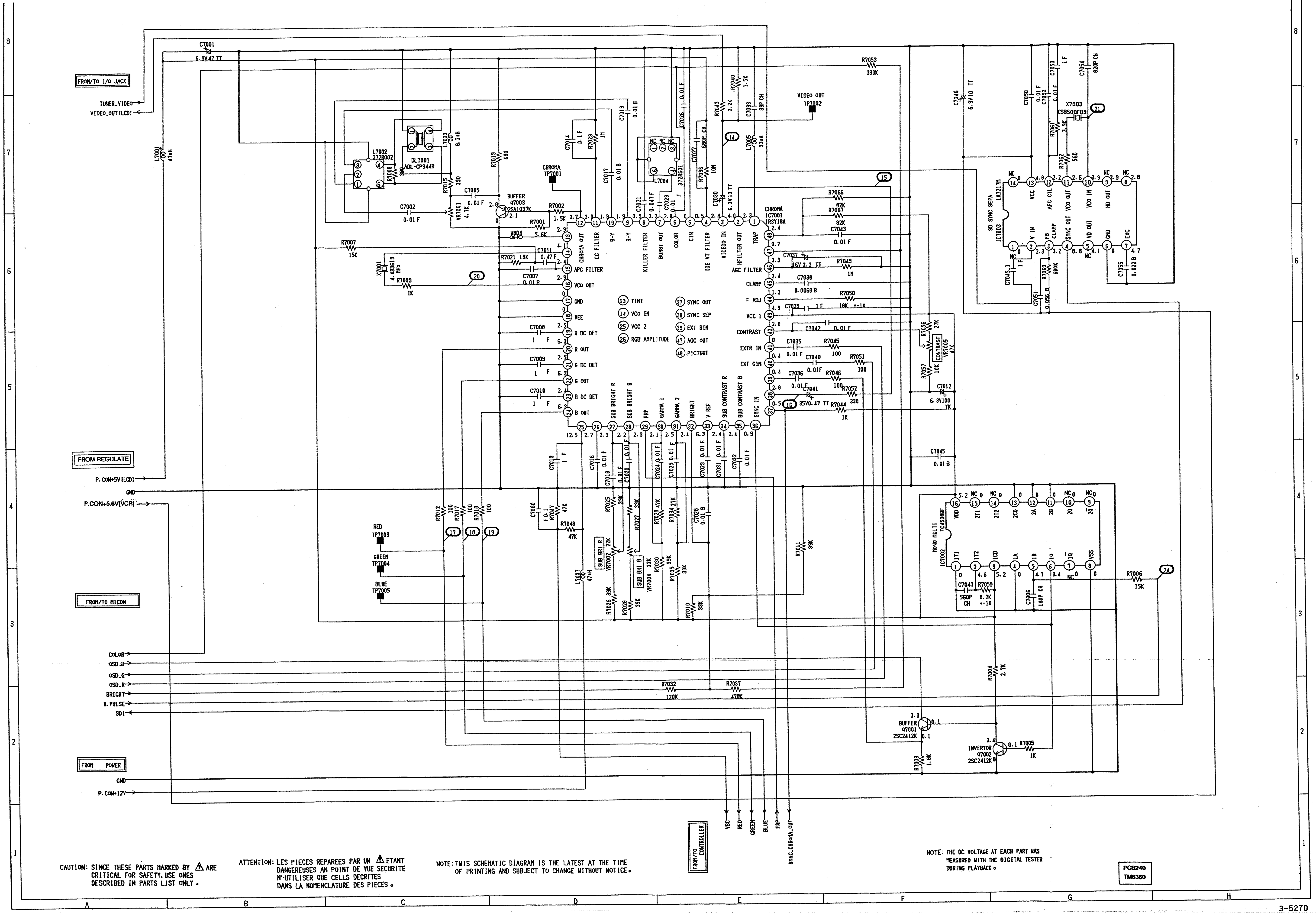
CHROMA SCHEMATIC DIAGRAM


FROM/TO I/O JACK
TUNER_VIDEO
VIDEO_OUT(LCD)
FROM REGULATE
P.CON+5V(LCD)
GND
P.CON+5.6V(VCR)
FROM/TO MICON
COLOR
OSD_B
OSD_G
OSD_R
BRIGHT
H.PULSE
SD1
FROM POWER
GND
P.CON+12V
FROM/TO CONTROLLER
VSC
RED
GREEN
BLUE
FRP
SYNC.CHROMA_OUT
CHROMA IC7001 IR3Y18A
SD SYNC SEPA IC7003 LA7217M
MONO MULTI IC7002 TC4538BF
BUFFER Q7003 2SA1037K
BUFFER Q7001 2SC2412K
INVERTOR Q7002 2SC2412K
DL7001 ADL-CP344R
X7001 4.433619 MHz
X7003 CSB500F89
VIDEO OUT TP7002
CHROMA TP7001
RED TP7003
GREEN TP7004
BLUE TP7005
SUB BRI R VR7002
SUB BRI B VR7004
CONTRAST VR7005
VR7001
13 TINT
14 VCO IN
25 VCC 2
26 RGB AMPLITUDE
37 SYNC OUT
38 SYNC SEP
39 EXT BIN
47 AGC OUT
48 PICTURE
CHROMA OUT
CC FILTER
B-Y
R-Y
KILLER FILTER
BURST OUT
COLOR
CIN
IDE VT FILTER
VIDEO IN
HFILTER OUT
TRAP
AGC FILTER
CLAMP
F ADJ
VCC 1
CONTRAST
EXTR IN
EXT GIN
APC FILTER
VCO OUT
GND
VEE
R DC DET
R OUT
G DC DET
G OUT
B DC DET
B OUT
SUB BRIGHT R
SUB BRIGHT B
FRP
GAMMA 1
GAMMA 2
BRIGHT
V REF
SUB CONTRAST R
SUB CONTRAST B
SYNC IN
1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H

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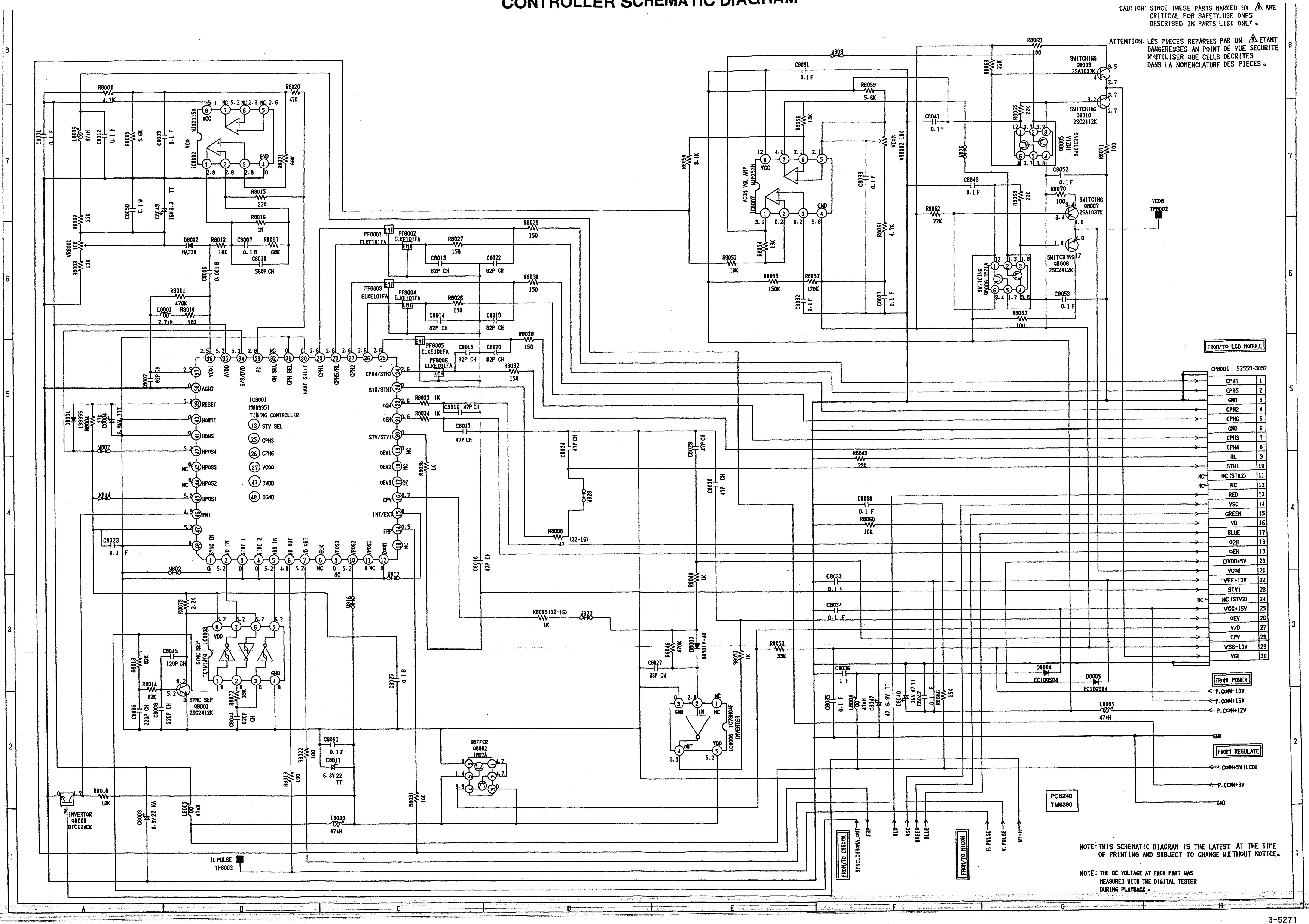
PCB240
TM6360

3-5270

CONTROLLER SCHEMATIC DIAGRAM

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY, USE ONES
DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.


IC8002 NJM2115M VCO
IC8001 MN83951 TIMING CONTROLLER
⑬ STV SEL
㉕ CPH3
㉖ CPH6
㊲ VCOO
㊼ DVDD
㊽ DGND
IC8007 NJM3534M VCOM, VGL AMP
IC8008 TC7W14FU SYNC SEP
IC8006 TC7S04F INVERTER
SYNC SEP Q8001 2SC2412K
BUFFER Q8002 IMD2A
INVERTOR Q8003 DTC124EK
SWITCHING Q8009 2SA1037K
SWITCHING Q8010 2SC2412K
Q8005 IMZ1A SWITCING
SWITCING Q8007 2SA1037K
SWITCHING Q8008 2SC2412K
SWITCING Q8006 IMZ1A
VR8001 10K
VR8002 10K VCOM
PF8001 ELKE101FA
PF8002 ELKE101FA
PF8003 ELKE101FA
PF8004 ELKE101FA
PF8005 ELKE101FA
PF8006 ELKE101FA
D8002 MA338
D8001 1SS355
D8003 RB501V-40
D8004 EC10QS04
D8005 EC10QS04
VCOM TP8002
H.PULSE TP8003
FROM/TO LCD MODULE
CP8001 52559-3092
CPH1 1
CPH5 2
GND 3
CPH2 4
CPH6 5
GND 6
CPH3 7
CPH4 8
RL 9
STH1 10
NC NC (STH2) 11
NC NC 12
RED 13
VSC 14
GREEN 15
VB 16
BLUE 17
Q2H 18
OEH 19
DVDD+5V 20
VCOM 21
VEE+12V 22
STV1 23
NC NC (STV2) 24
VGG+15V 25
OEV 26
V/D 27
CPV 28
VSS-10V 29
VGL 30
FROM POWER
P.CON-10V
P.CON+15V
P.CON+12V
GND
FROM REGULATE
P.CON+5V (LCD)
P.CON+3V
GND
FROM/TO CHROMA
SYNC,CHROMA_OUT
FRP
RED
VSC
GREEN
BLUE
FROM/TO MICON
H.PULSE
V.PULSE
NT-H
PCB240
TM6360
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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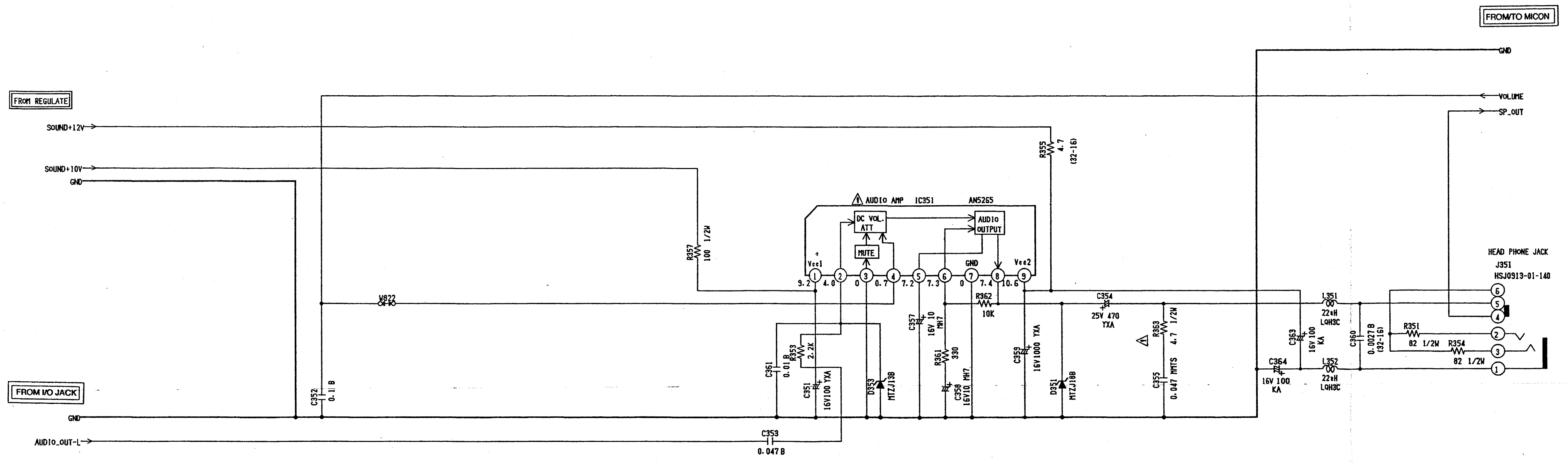
SOUND AMP SCHEMATIC DIAGRAM


FROM REGULATE
SOUND+12V
SOUND+10V
GND
FROM I/O JACK
GND
AUDIO_OUT-L
C352
0.1 B
W822
R357
100 1/2W
AUDIO AMP IC351 AN5265
DC VOL. ATT
MUTE
AUDIO OUTPUT
Vcc1
GND
Vcc2
1
2
3
4
5
6
7
8
9
9.2
4.0
0
0.7
7.2
7.3
0
7.4
10.6
R355
4.7
(32-16)
R362
10K
C361
0.01 B
R353
2.2K
C351
16V100 YXA
D353
MTZJ13B
C357
16V 10
MH7
R361
330
C358
16V10 MH7
C359
16V1000 YXA
D351
MTZJ18B
C354
25V 470
YXA
R363
4.7 1/2W
C355
0.047 MMTS
C353
0.047 B
FROM/TO MICON
GND
VOLUME
SP_OUT
C364
16V 100
KA
C363
16V 100
KA
L351
22μH
LQH3C
L352
22μH
LQH3C
C360
0.0027 B
(32-16)
R351
82 1/2W
R354
82 1/2W
HEAD PHONE JACK
J351
HSJ0913-01-140
6
5
4
2
3
1

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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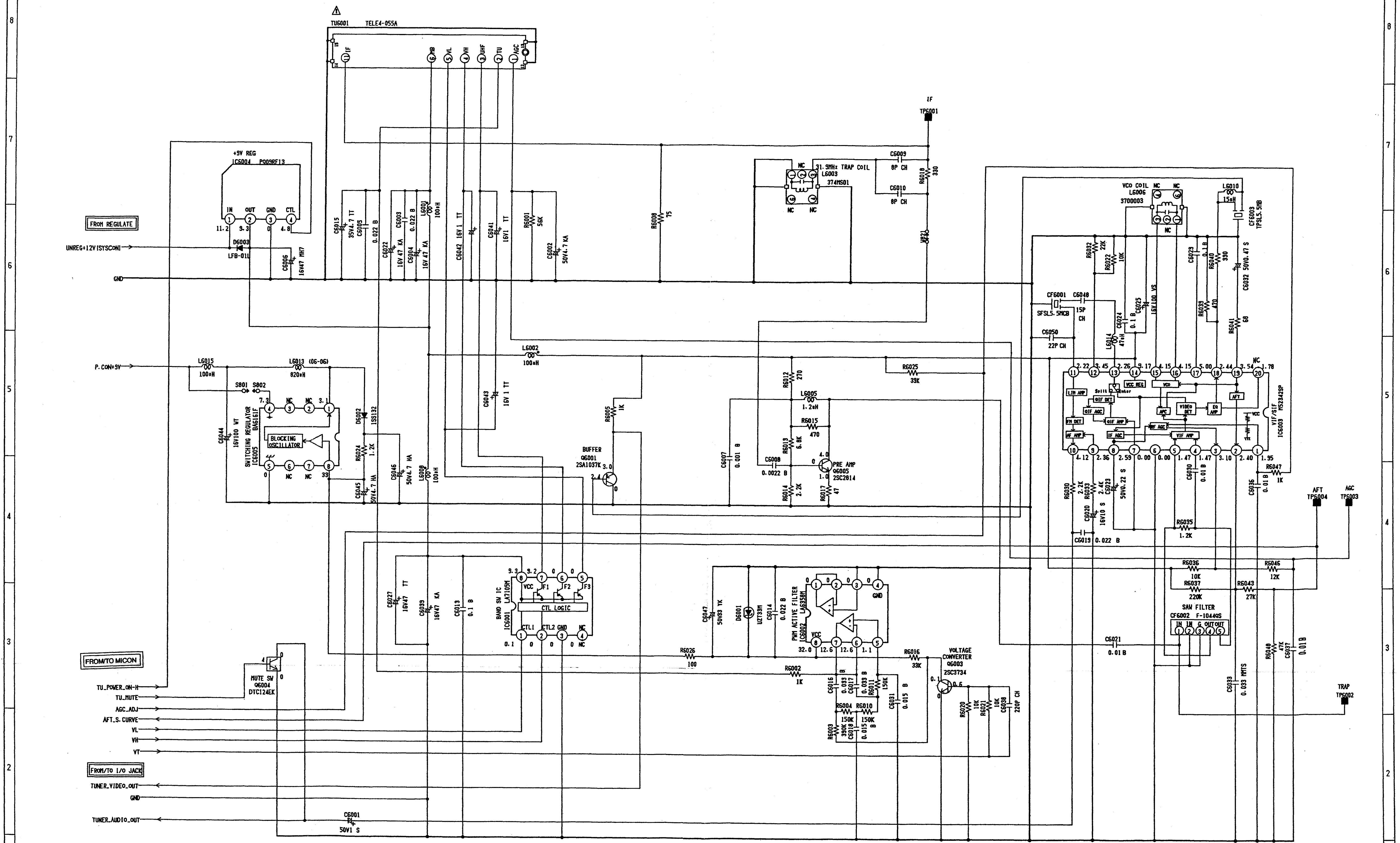
PCB240
TM6360

DEMODULATOR SCHEMATIC DIAGRAM


⚠
TU6001 TELE4-055A
IF
MB
VL
VH
UHF
TU
AGC
IF
TP6001
FROM REGULATE
UNREG+12V(SYSCON)
GND
+9V REG
IC6004 PQ09RF13
IN
OUT
GND
CTL
11.2
9.3
0
4.8
D6003
LFB-01U
C6006 16V47 MH7
C6015 35V4.7 TT
C6005 0.022 B
C6022 16V 47 KA
C6003 0.022 B
C6004 16V 47 KA
L6001 100uH
C6042 16V 1 TT
C6041 16V1 TT
R6001 56K
C6002 50V4.7 KA
R6008 75
31.9MHz TRAP COIL
L6003
374MS01
NC
C6009 8P CH
C6010 8P CH
R6018 330
W821
P.CON+9V
L6015 100uH
L6013 (06-06) 820uH
S801
S802
7.3
3.1
33
SWITCHING REGULATOR BA6161F
IC6005
BLOCKING OSCILLATOR
C6044 16V100 WT
D6002 1SS132
R6024 1.2K
C6045 50V4.7 HA
C6046 50V4.7 HA
L6008 100uH
L6002 100uH
C6043 16V 1 TT
R6005 1K
BUFFER
Q6001
2SA1037K
3.0
2.4
0
R6012 270
L6005 1.2uH
R6015 470
R6013 6.8K
C6007 0.001 B
C6008 0.0022 B
4.0
1.0
PRE AMP
Q6005
2SC2814
R6014 2.2K
R6017 47
R6025 39K
VCO COIL
L6006
3700003
L6010 15uH
CF6003 TPSL5.5MB
R6032 22K
R6022 10K
C6029 0.1 B
R6040 330
C6032 50V0.47 S
CF6001 SFSL5.5MCB
C6048 15P CH
C6050 22P CH
C6024 0.1 B
C6025 16V100 VS
L6014 47uH
R6039 470
R6041 68
2.22
3.45
2.26
9.17
4.15
4.15
5.00
2.44
3.54
1.78
LIM AMP
Split
Inter
QIF DET
QIF AGC
QIF AMP
FM DET
AF AMP
IF AGC
RF AGC
VIF AMP
VCC REG
VCO
APC
VIDEO DET
EQ AMP
AFT
VCC
VIF/SIF M52342SP
IC6003
4.12
2.36
2.59
0.00
0.00
1.47
1.47
3.10
2.40
1.95
R6030 2.2K
R6033 2.4K
C6023 50V0.22 S
C6020 16V10 S
C6019 0.022 B
C6030 0.01 B
C6036 0.01 B
R6047 1K
R6035 1.2K
AFT
TP6004
AGC
TP6003
R6036 10K
R6037 220K
R6046 12K
R6043 27K
SAW FILTER
CF6002 F-10440S
IN
G
OUT
C6021 0.01 B
R6048 47K
C6027 0.01 B
C6033 0.033 MMTS
TRAP
TP6002
C6027 16V47 TT
C6039 16V47 KA
C6013 0.1 B
BAND SW IC
IC6001 LA7105M
VCC
F1
F2
F3
CTL LOGIC
CTL1
CTL2
GND
NC
9.3
9.2
0.1
C6047 50V33 YK
D6001 UZT33M
C6014 0.022 B
PWM ACTIVE FILTER
IC6002 LA6358M
32.0
12.6
12.6
1.1
R6026 100
R6002 1K
C6016 0.033 B
C6017 0.039 B
R6011 150K
R6004 150K
R6010 150K
R6003 390K
C6018 0.015 B
C6031 0.015 B
R6016 33K
VOLTAGE CONVERTER
Q6003
2SC3734
0.1
0.6
R6020 10K
R6021 10K
C6038 220P CH
FROM/TO MICON
MUTE SW
Q6004
DTC124EK
TU_POWER_ON-H
TU_MUTE
AGC_ADJ
AFT_S.CURVE
VL
VH
VT
FROM/TO I/O JACK
TUNER_VIDEO_OUT
GND
TUNER_AUDIO_OUT
C6001
50V1 S

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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PCB240
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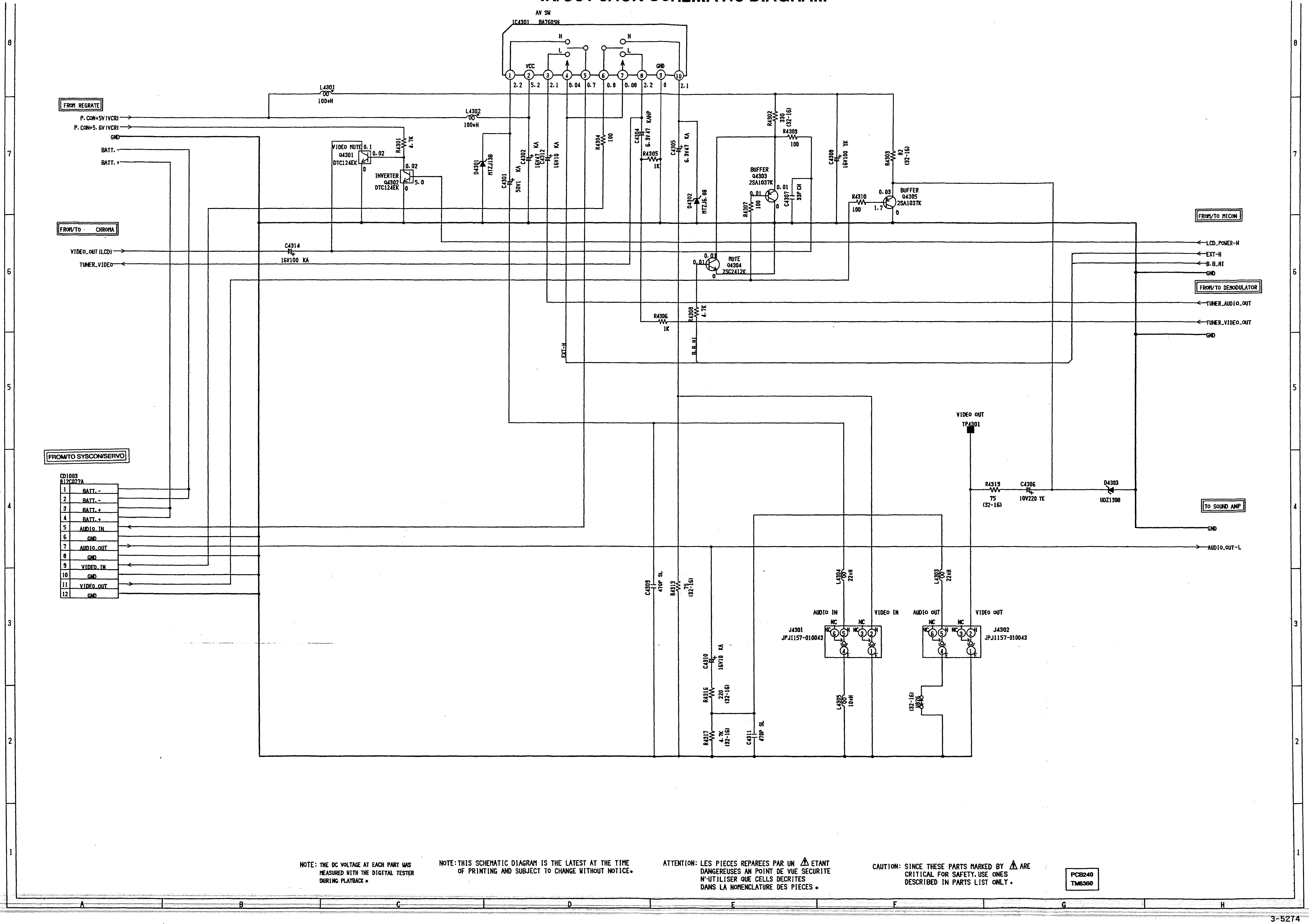
IN/OUT JACK SCHEMATIC DIAGRAM



AV SW
IC4301 BA7605N
H
L
VCC
GND
1
2
3
4
5
6
7
8
9
10
2.2
5.2
2.1
0.04
0.7
0.8
0.08
2.2
0
2.1
FROM REGRATE
P.CON+5V(VCR)
P.CON+5.6V(VCR)
GND
BATT.-
BATT.+
L4301
100μH
L4302
100μH
VIDEO MUTE
Q4301
DTC124EK
0.1
0.02
0
R4301
4.7K
INVERTER
Q4302
DTC124EK
0.02
5.0
0
D4301
MTZJ13B
C4301
50V1 KA
C4302
16V47 KA
C4312
16V10 KA
R4304
100
C4304
6.3V47 KANP
R4305
1K
C4305
6.3V47 KA
D4302
MTZJ6.8B
R4302
330 (32-16)
R4309
100
BUFFER
Q4303
2SA1037K
0.01
0
R4307
100
C4307
33P CH
C4308
16V100 YK
R4303
82 (32-16)
BUFFER
Q4305
2SA1037K
0.03
1.7
0
R4310
100
FROM/TO CHROMA
VIDEO_OUT(LCD)
TUNER_VIDEO
C4314
16V100 KA
MUTE
Q4304
2SC2412K
0.01
0.01
0
FROM/TO MICON
LCD_POWER-H
EXT-H
B.B.HI
GND
FROM/TO DEMODULATOR
TUNER_AUDIO_OUT
TUNER_VIDEO_OUT
GND
R4306
1K
R4308
4.7K
EXT-H
B.B.HI
VIDEO OUT
TP4301
R4319
75 (32-16)
C4306
10V220 YK
D4303
UDZ130B
TO SOUND AMP
GND
AUDIO_OUT-L
FROM/TO SYSCON/SERVO
CD1003
812C027A
1 BATT.-
2 BATT.-
3 BATT.+
4 BATT.+
5 AUDIO IN
6 GND
7 AUDIO OUT
8 GND
9 VIDEO IN
10 GND
11 VIDEO OUT
12 GND
C4309
470P SL
R4313
75 (32-16)
L4304
22μH
L4303
22μH
AUDIO IN
VIDEO IN
AUDIO OUT
VIDEO OUT
NC
J4301
JPJ1157-010043
J4302
JPJ1157-010043
C4310
16V10 KA
R4316
220 (32-16)
R4317
4.7K (32-16)
C4311
470P SL
L4305
10μH
R4318
(32-16)
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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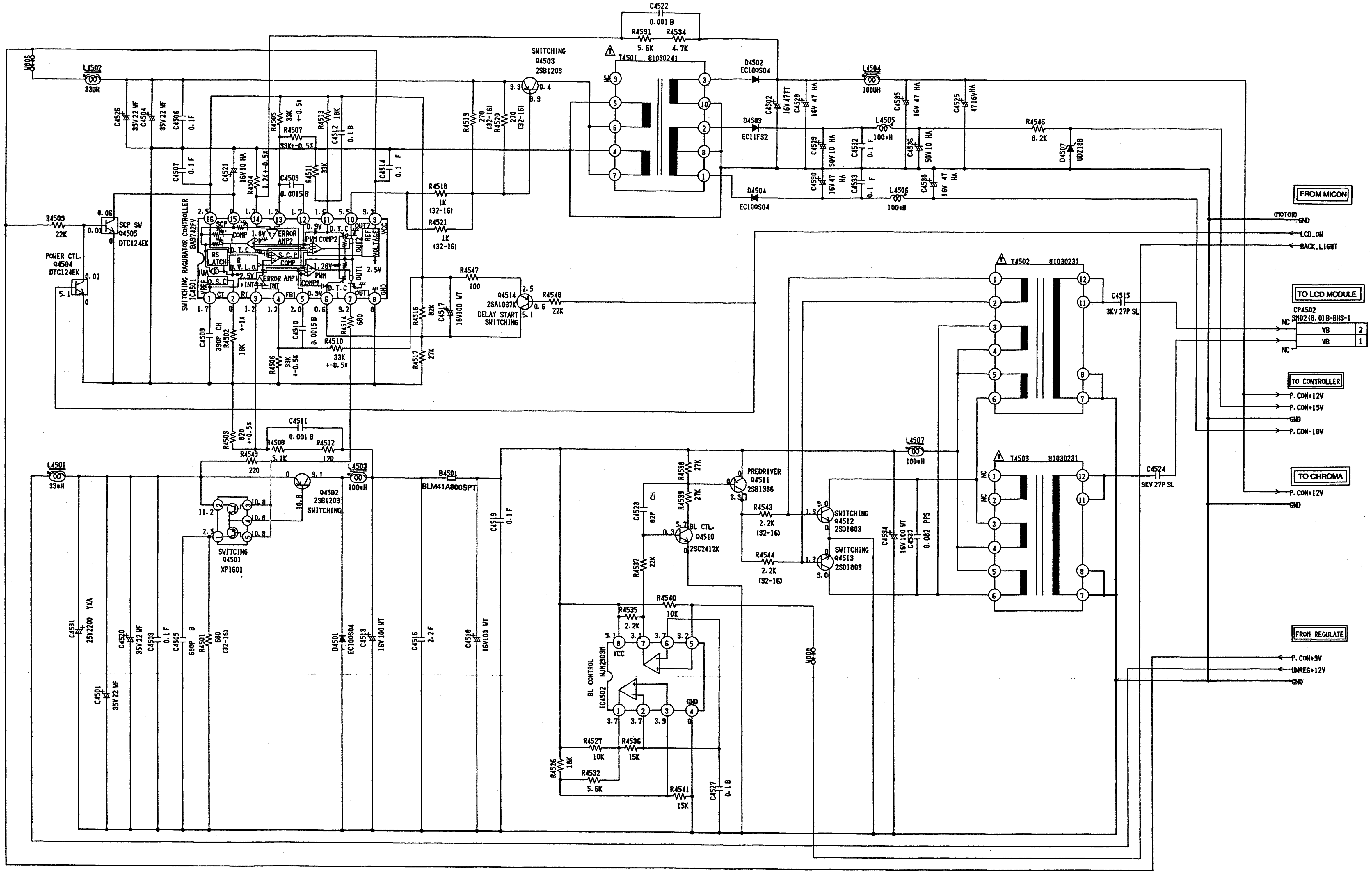
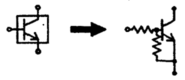
PCB240
TM6360

POWER SCHEMATIC DIAGRAM


C4522
0.001 B
R4531 5.6K
R4534 4.7K
SWITCHING Q4503 2SB1203
T4501 81030241
D4502 EC10QS04
D4503 EC11FS2
D4504 EC10QS04
L4502 33UH
L4504 100UH
L4505 100uH
L4506 100uH
L4501 33uH
L4503 100uH
L4507 100uH
C4526 35V 22 WF
C4504 35V 22 WF
C4506 0.1F
C4507 0.1 F
C4521 16V 10 HA
R4504 1.2K +-0.5%
R4505 33K +-0.5%
R4507 33K +-0.5%
R4513 18K
C4512 0.1 B
R4511 33K
C4509 0.0015 B
C4514 0.1 F
R4519 270 (32-16)
R4520 270 (32-16)
R4518 1K (32-16)
R4521 1K (32-16)
C4502 16V 47TT
C4528 16V 47 HA
C4529 50V 10 HA
C4532 0.1 F
C4530 16V 47 HA
C4533 0.1 F
C4535 16V 47 HA
C4536 50V 10 HA
C4538 16V 47 HA
C4525 4716V HA
R4546 8.2K
D4507 UDZ18B
R4509 22K
SCP SW Q4505 DTC124EK
POWER CTL. Q4504 DTC124EK
SWITCHING RAGURATOR CONTROLLER BA9742FV IC4501
ERROR AMP2
PWM COMP2
ERROR AMP1
PWM COMP1
S.C.P COMP
U.V.L.O.
RS LATCH
D.T.C
OUT1
OUT2
REF
VOLTAGE
VCC
GND
R4547 100
Q4514 2SA1037K DELAY START SWITCHING
R4548 22K
R4516 82K
C4517 16V 100 WT
R4517 27K
C4508 390P CH
R4502 18K
C4510 0.0015 B
R4506 33K +-0.5%
R4510 33K +-0.5%
R4514 680
R4503 820 +-0.5%
R4508 5.1K
C4511 0.001 B
R4512 120
R4549 220
Q4502 2SB1203 SWITCHING
SWITCING Q4501 XP1601
B4501 BLM41A800SPT
C4519 0.1 F
C4531 25V 2200 YXA
C4520 35V 22 WF
C4503 0.1 F
C4505 680P B
R4501 680 (32-16)
C4501 35V 22 WF
D4501 EC10QS04
C4513 16V 100 WT
C4516 2.2 F
C4518 16V 100 WT
R4538 27K
R4539 27K
PREDRIVER Q4511 2SB1386
C4523 82P CH
BL CTL. Q4510 2SC2412K
R4543 2.2K (32-16)
R4544 2.2K (32-16)
SWITCHING Q4512 2SD1803
SWITCHING Q4513 2SD1803
C4534 16V 100 WT
C4537 0.082 PPS
R4537 22K
R4540 10K
R4535 2.2K
BL CONTROL IC4502 NJM2903M
R4527 10K
R4536 15K
R4530 18K
R4532 5.6K
R4541 15K
C4527 0.1 B
T4502 81030231
T4503 81030231
C4515 3KV 27P SL
C4524 3KV 27P SL
FROM MICON
(MOTOR) GND
LCD_ON
BACK_LIGHT
TO LCD MODULE
CP4502 SM02(8.0)B-BHS-1
NC
VB 2
VB 1
TO CONTROLLER
P.CON+12V
P.CON+15V
GND
P.CON-10V
TO CHROMA
P.CON+12V
GND
FROM REGULATE
P.CON+5V
UNREG+12V
GND

CAUTION: DIGITAL TRANSISTOR



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

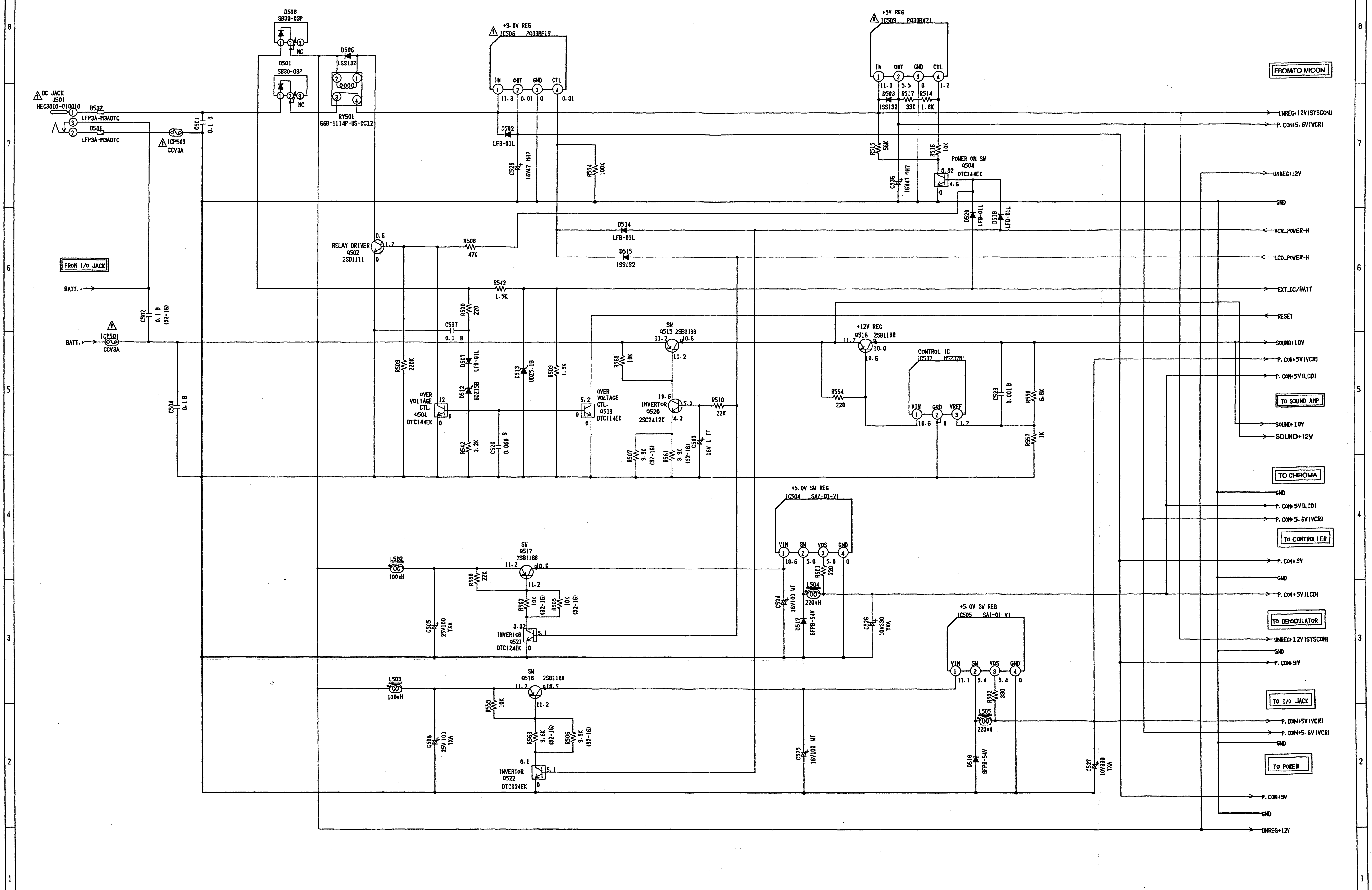
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

PCB240
TM6360

REGULATE SCHEMATIC DIAGRAM


⚠ DC JACK
J501
HEC3810-010010
B502
LFP3A-M3A0TC
B501
LFP3A-M3A0TC
⚠ ICP503
CCV3A
C501
0.1 B
FROM I/O JACK
BATT.-
BATT.+
⚠ ICP501
CCV3A
C502
0.1 B (32-16)
C504
0.1 B
D508
SB30-03P
NC
D501
SB30-03P
D506
1SS132
RY501
G6B-1114P-US-DC12
+9.0V REG
⚠ IC506 PQ09RF13
IN OUT GND CTL
11.3 0.01 0 0.01
D502
LFB-01L
C528
16V47 MH7
R504
100K
RELAY DRIVER
Q502
2SD1111
0.6
1.2
R508
47K
D514
LFB-01L
D515
1SS132
R543
1.5K
R520
220
C537
0.1 B
R509
220K
D507
LFB-01L
D512
UDZ15B
D513
UDZ5.1B
R503
1.5K
OVER VOLTAGE CTL.
Q501
DTC144EK
R542
2.2K
C520
0.068 B
OVER VOLTAGE CTL.
Q513
DTC114EK
5.2
SW
Q515 2SB1188
11.2 10.6
R560
10K
INVERTOR
Q520
2SC2412K
10.6 5.0 4.3
R510
22K
R507
3.9K (32-16)
R561
3.9K (32-16)
C503
16V 1 TT
+5V REG
⚠ IC509 PQ30RV21
IN OUT GND CTL
11.3 5.5 0 1.2
D503
1SS132
R517
33K
R514
1.8K
R515
56K
R516
10K
C536
16V47 MH7
POWER ON SW
Q504
DTC144EK
0.02
4.6
D520
LFB-01L
D519
LFB-01L
+12V REG
Q516 2SB1188
11.2 10.0 10.6
R554
220
CONTROL IC
IC507 M5237ML
VIN GND VREF
10.6 0 1.2
C523
0.001 B
R556
6.8K
R557
1K
FROM/TO MICON
UNREG+12V (SYSCON)
P.CON+5.6V (VCR)
UNREG+12V
GND
VCR_POWER-H
LCD_POWER-H
EXT_DC/BATT
RESET
SOUND+10V
P.CON+5V (VCR)
P.CON+5V (LCD)
TO SOUND AMP
SOUND+10V
SOUND+12V
TO CHROMA
GND
P.CON+5V (LCD)
P.CON+5.6V (VCR)
TO CONTROLLER
P.CON+9V
GND
P.CON+5V (LCD)
TO DEMODULATOR
UNREG+12V (SYSCON)
GND
P.CON+9V
TO I/O JACK
P.CON+5V (VCR)
P.CON+5.6V (VCR)
GND
TO POWER
P.CON+9V
GND
UNREG+12V
L502
100μH
SW
Q517
2SB1188
11.2 10.6 11.2
R558
22K
C505
25V100 YXA
R562
10K (32-16)
R505
10K (32-16)
INVERTOR
Q521
DTC124EK
0.02 5.1 0
+5.0V SW REG
IC504 SAI-01-V1
VIN SW VOS GND
10.6 5.0 5.0 0
R501
220
L504
220μH
C524
16V100 VT
D517
SFPB-54V
C526
10V330 YXA
L503
100μH
SW
Q518 2SB1188
11.2 10.5 11.2
R559
10K
C506
25V 100 YXA
R563
3.3K (32-16)
R506
3.3K (32-16)
INVERTOR
Q522
DTC124EK
0.1 5.1 0
C525
16V100 VT
+5.0V SW REG
IC505 SAI-01-V1
VIN SW VOS GND
11.1 5.4 5.4 0
R502
330
L505
220μH
D518
SFPB-54V
C527
10V330 YXA
A B C D E F G H
1 2 3 4 5 6 7 8

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

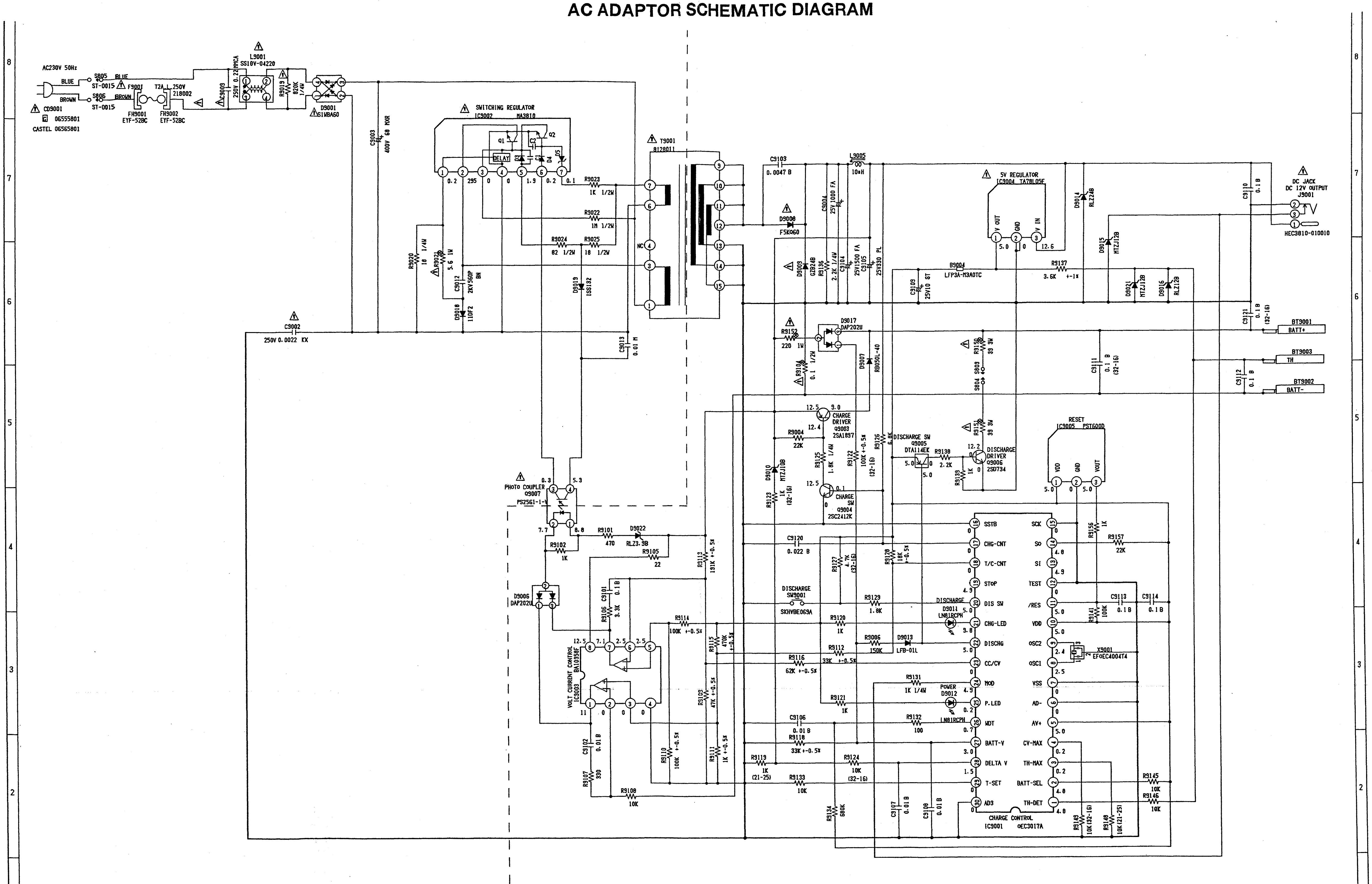
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

PCB240
TM6360

AC ADAPTOR SCHEMATIC DIAGRAM


AC230V 50Hz
BLUE
BROWN
CD9001
06555801
CASTEL 06565801
S805
S806
ST-0015
F9001
T2A L 250V
218002
FH9001
FH9002
EYF-52BC
C9009
250V 0.22MMCA
L9001
SS10V-04220
R9019
820K 1/4W
D9001
S1WBA60
C9003
400V 68 MXR
SWITCHING REGULATOR
IC9002 MA3810
Q1
Q2
DELAY
D3
C1
C2
D4
D5
0.2
295
0
0
1.9
0.2
0.1
R9023
1K 1/2W
R9022
1M 1/2W
R9024
82 1/2W
R9025
18 1/2W
R9020
1/4W 18
R9021
5.6 1W
C9012
2KV560P BN
D9018
11DF2
D9019
1SS132
C9013
0.01 M
T9001
8128011
NC
C9002
250V 0.0022 KX
C9103
0.0047 B
L9005
10μH
C9004
25V 1000 FA
D9008
F5KQ60
D9009
GZ824B
R9136
2.2K 1/4W
C9104
C9105
25V1500 FA
25V330 PL
5V REGULATOR
IC9004 TA78L05F
V OUT
GND
V IN
5.0
0
12.6
D9014
RLZ24B
D9015
MTZJ12B
D9021
MTZJ12B
D9016
RLZ12B
B9004
LFP3A-H3A0TC
R9137
3.6K +-1%
C9109
25V10 ST
C9110
0.1 B
DC JACK
DC 12V OUTPUT
J9001
HEC3810-010010
C9121
0.1 B (32-16)
BT9001
BATT+
BT9003
TH
BT9002
BATT-
C9111
0.1 B (32-16)
C9112
0.1 B
R9152
220 1W
D9017
DAP202U
R9106
0.1 1/2W
D9007
RB050L-40
R9150
33 5W
S804 S803
12.5
9.0
12.4
CHARGE DRIVER
Q9003
2SA1897
R9004
22K
R9125
1.8K 1/4W
R9122
100K +-0.5%
(32-16)
R9126
6.8K
DISCHARGE SW
Q9005
DTA114EK
R9138
2.2K
R9139
1K
R9153
33 5W
12.2
DISCHARGE DRIVER
Q9006
2SD734
D9010
MTZJ10B
R9123
1K (32-16)
CHARGE SW
Q9004
2SC2412K
RESET
IC9005 PST600D
VDD
GND
VOUT
PHOTO COUPLER
Q9007
PS2561-1-V
0.3
5.3
7.7
8.8
R9101
470
D9022
RLZ3.9B
R9102
1K
R9105
22
R9113
191K +-0.5%
D9006
DAP202U
C9101
0.1 B
R9106
3.3K
R9114
100K +-0.5%
R9115
470K +-0.5%
VOLT CURRENT CONTROL
IC9003 BA10358F
12.5
7.1
2.5
2.5
11
0
0
0
R9109
47K +-0.5%
C9102
0.01 B
R9107
330
R9108
10K
R9110
100K +-0.5%
R9111
1K +-0.5%
C9120
0.022 B
R9127
4.7K (32-16)
R9128
18K +-0.5%
DISCHARGE
SW9001
SKHVBE069A
R9129
1.8K
R9120
1K
R9006
150K
D9013
LFB-01L
R9112
33K +-0.5%
R9116
62K +-0.5%
R9131
1K 1/4W
POWER
D9012
LN81RCPH
R9121
1K
C9106
0.01 B
R9118
33K +-0.5%
R9132
100
R9119
1K (21-25)
R9124
10K (32-16)
R9133
10K
R9134
680K
C9107
0.01 B
C9108
0.01 B
DISCHARGE
D9011
LN81RCPH
SSTB
CHG-CNT
T/C-CNT
STOP
DIS SW
CHG-LED
DISCHG
CC/CV
MOD
P.LED
WDT
BATT-V
DELTA V
T-SET
AD3
SCK
SO
SI
TEST
/RES
VDD
OSC2
OSC1
VSS
AD-
AV+
CV-MAX
TH-MAX
BATT-SEL
TH-DET
CHARGE CONTROL
IC9001 OEC3017A
R9156
1K
R9157
22K
R9141
100K
C9113
0.1 B
C9114
0.1 B
X9001
EFOEC4004T4
R9145
10K
R9146
10K
R9149
10K (32-16)
R9148
10K (21-25)
4.9
5.0
5.8
0.2
0.7
3.0
1.5
4.8
2.4
2.5
1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H

2A 250V

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD.
REPLACE ONLY WITH SAME TYPE FUSE 2A 250V(F9001).

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE
2A 250V (F9001).

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY, USE ONES
DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

PCB390
TE6909

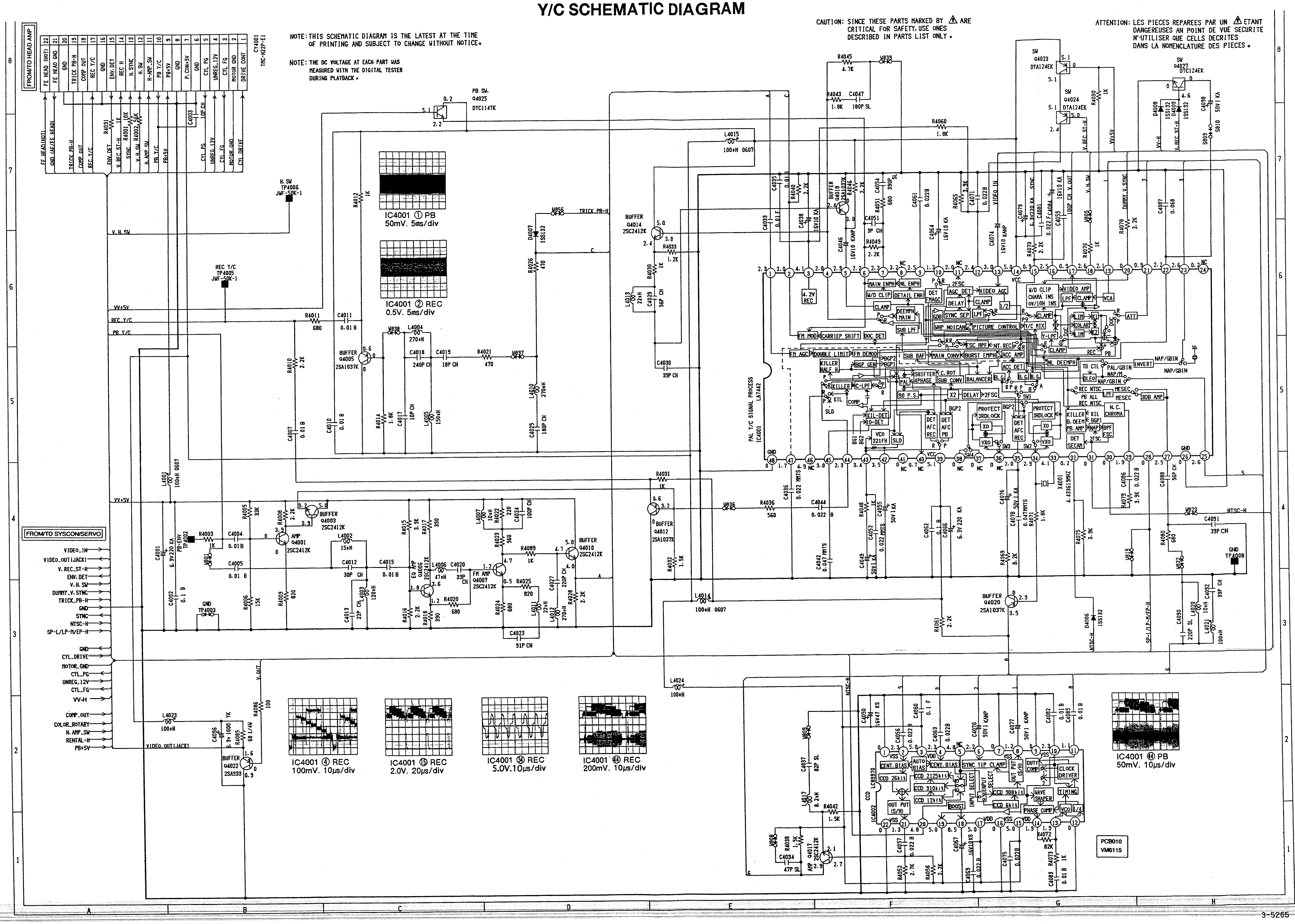
Y/C SCHEMATIC DIAGRAM

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

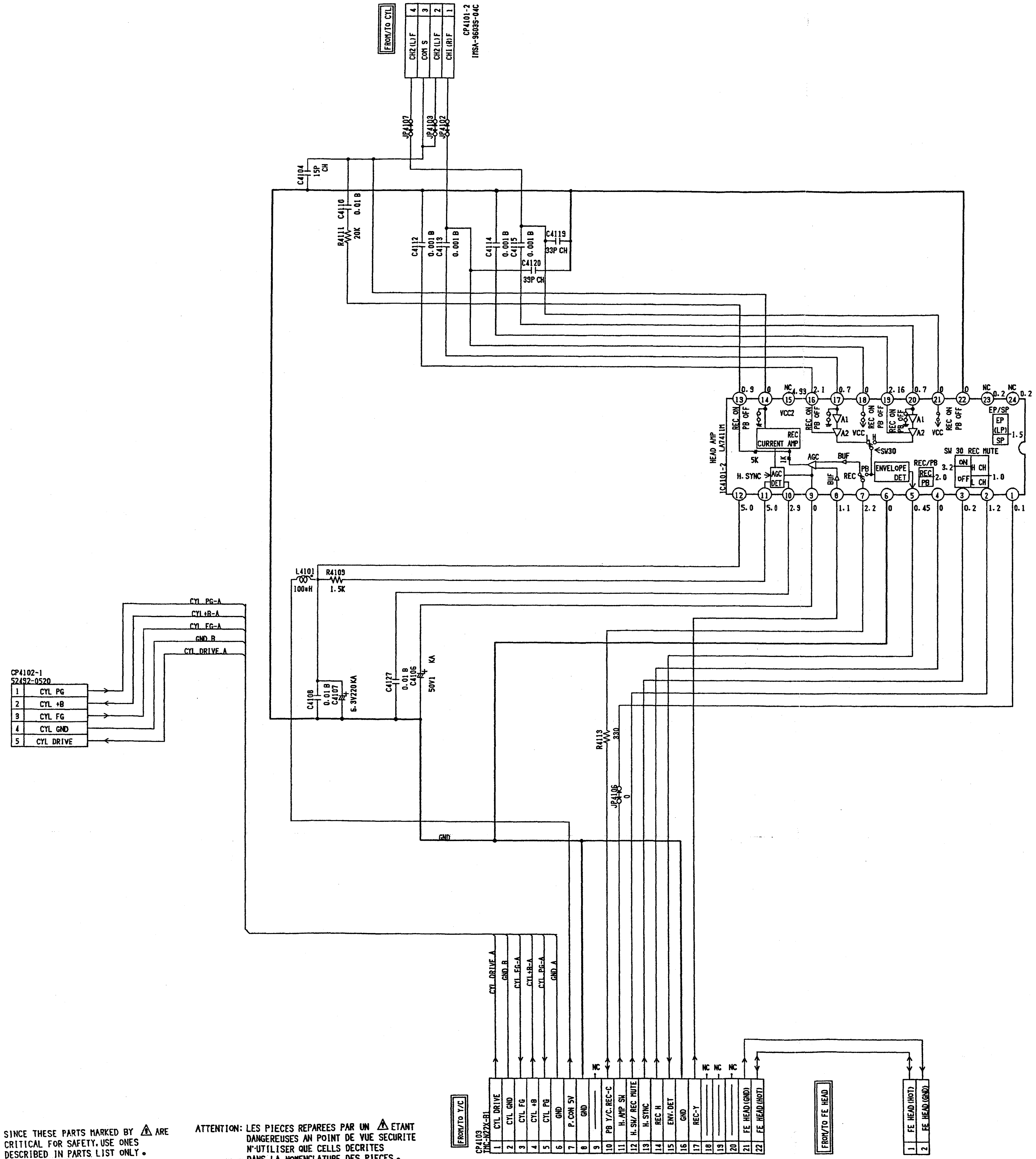
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.



FROM/TO HEAD AMP
CY4001 TMC-N22P-E1
FE HEAD (HOT)
FE HEAD GND
GND
TRICK PB-H
COMP OUT
REC Y/C
GND
ENV.DET
REC H
H.SYNC
H.SW
H-AMP.SW
PB Y/C
PB+5V
GND
P.CON+5V
GND
CYL PG
UNREG.12V
CYL FG
MOTOR GND
DRIVE CONT
FROM/TO SYSCON/SERVO
VIDEO_IN
VIDEO_OUT(JACK)
V.REC_ST-H
ENV.DET
V.H.SW
DUMMY_V.SYNC
TRICK_PB-H
GND
SYNC
NTSC-H
SP-L/LP-M/EP-H
GND
CYL_DRIVE
MOTOR_GND
CYL_PG
UNREG_12V
CYL_FG
VV-H
COMP_OUT
COLOR_ROTARY
H.AMP_SW
RENTAL-H
PB+5V
H.SW TP4006 JWF-50K-1
REC Y/C TP4005 JWF-50K-1
PB SW. Q4025 DTC114TK
BUFFER Q4005 2SA1037K
BUFFER Q4014 2SC2412K
BUFFER Q4012 2SA1037K
BUFFER Q4003 2SC2412K
AMP Q4001 2SC2412K
EQ AMP Q4006 2SC2412K
FM AMP Q4007 2SC2412K
BUFFER Q4010 2SC2412K
BUFFER Q4020 2SA1037K
BUFFER Q4022 2SA933
AMP Q4017 2SC2412K
BUFFER Q4018 2SA1037K
SW Q4023 DTA124EK
SW Q4024 DTA124EK
SW Q4027 DTC124EK
PAL Y/C SIGNAL PROCESS LA7442 IC4001
CCD LC89970 IC4002
X4001 4.433619MHZ
GND TP4003
GND TP4008
IC4001 ① PB 50mV. 5ms/div
IC4001 ② REC 0.5V. 5ms/div
IC4001 ④ REC 100mV. 10μs/div
IC4001 ⑮ REC 2.0V. 20μs/div
IC4001 ㉞ REC 5.0V.10μs/div
IC4001 ㊹ REC 200mV. 10μs/div
IC4001 ㊹ PB 50mV. 10μs/div
PCB010 VM6115

HEAD AMP SCHEMATIC DIAGRAM


FROM/TO CYL
CP4101-2
IMSA-9603S-04C
4 CH2(L)F
3 COM S
2 CH2(L)F
1 CH1(R)F
JP4107
JP4103
JP4102
C4104 15P CH
R4111 20K
C4110 0.01 B
C4112 0.001 B
C4113 0.001 B
C4114 0.001 B
C4115 0.001 B
C4119 33P CH
C4120 39P CH
HEAD AMP
IC4101-2 LA7411M
REC ON PB OFF
VCC2
REC CURRENT AMP
VCC
A1
A2
SW30
H
5K
1K
H. SYNC
AGC DET
AGC
BUF
REC
PB
ENVELOPE DET
REC/PB
REC
PB
EP/SP
EP (LP)
SP
SW 30 REC MUTE
ON
OFF
H CH
L CH
NC
0.9
0
4.99
2.1
0.7
2.16
0.2
1.5
3.2
2.0
1.0
5.0
2.9
1.1
2.2
0.45
1.2
0.1
L4101 100mH
R4109 1.5K
CYL PG-A
CYL+B-A
CYL FG-A
GND B
CYL DRIVE A
CP4102-1
52492-0520
1 CYL PG
2 CYL +B
3 CYL FG
4 CYL GND
5 CYL DRIVE
C4108 0.01 B
C4107 6.3V220KA
C4127 0.01 B
C4106 50V1 KA
R4113 330
JP4106 0
GND
CYL DRIVE A
GND B
CYL FG-A
CYL+B-A
CYL PG-A
GND A
FROM/TO Y/C
CP4103
TMC-N22X-B1
1 CYL DRIVE
2 CYL GND
3 CYL FG
4 CYL +B
5 CYL PG
6 GND
7 P.CON 5V
8 GND
9
10 PB Y/C.REC-C
11 H.AMP SW
12 H.SW/ REC MUTE
13 H.SYNC
14 REC H
15 ENV.DET
16 GND
17 REC-Y
18
19
20
21 FE HEAD(GND)
22 FE HEAD(HOT)
FROM/TO FE HEAD
1 FE HEAD(HOT)
2 FE HEAD(GND)

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY. USE ONES
DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING RECORDING (SP MODE)

PCB330
VE5686

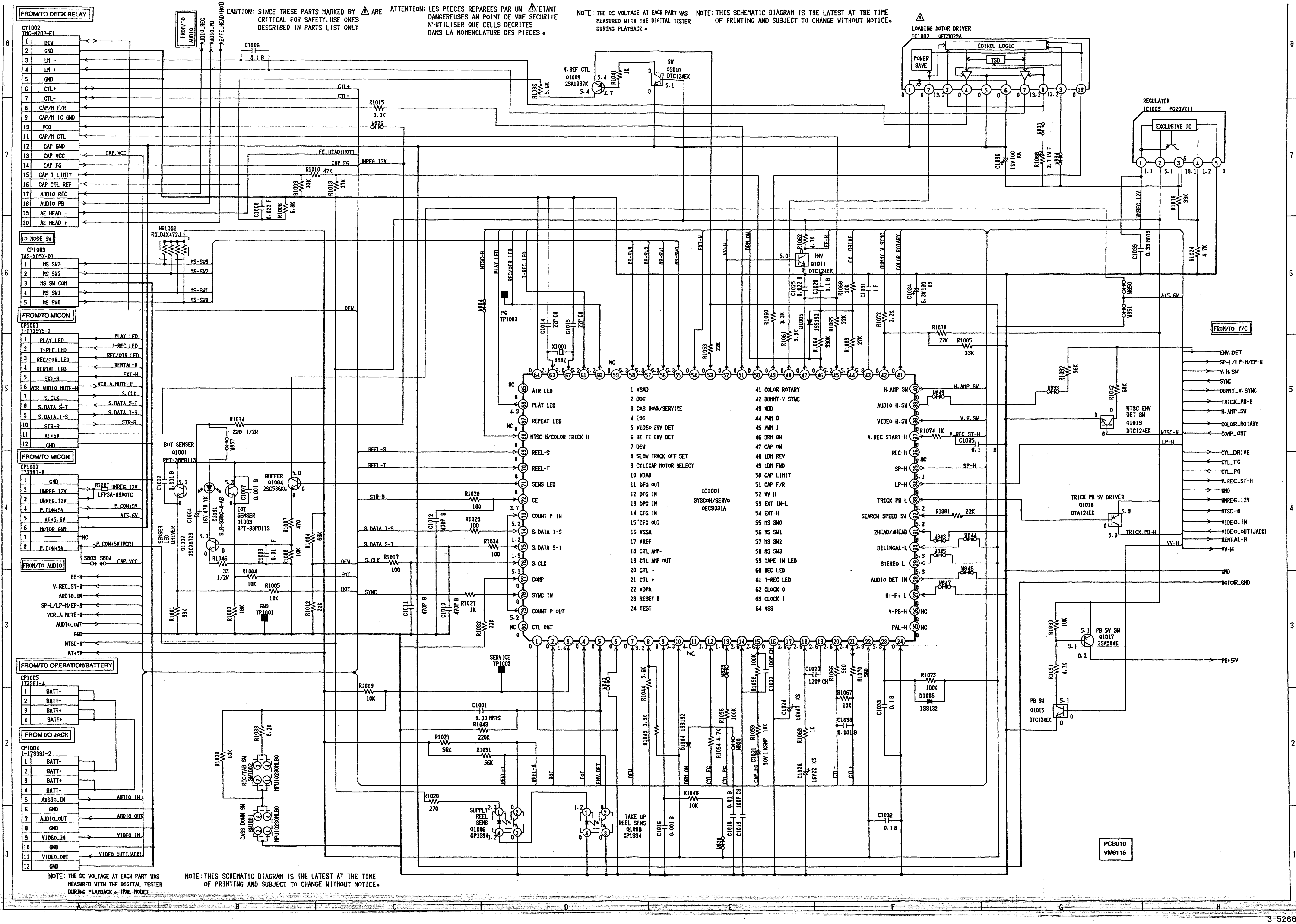
SYSTEM CONTROL／SERVO SCHEMATIC DIAGRAM

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

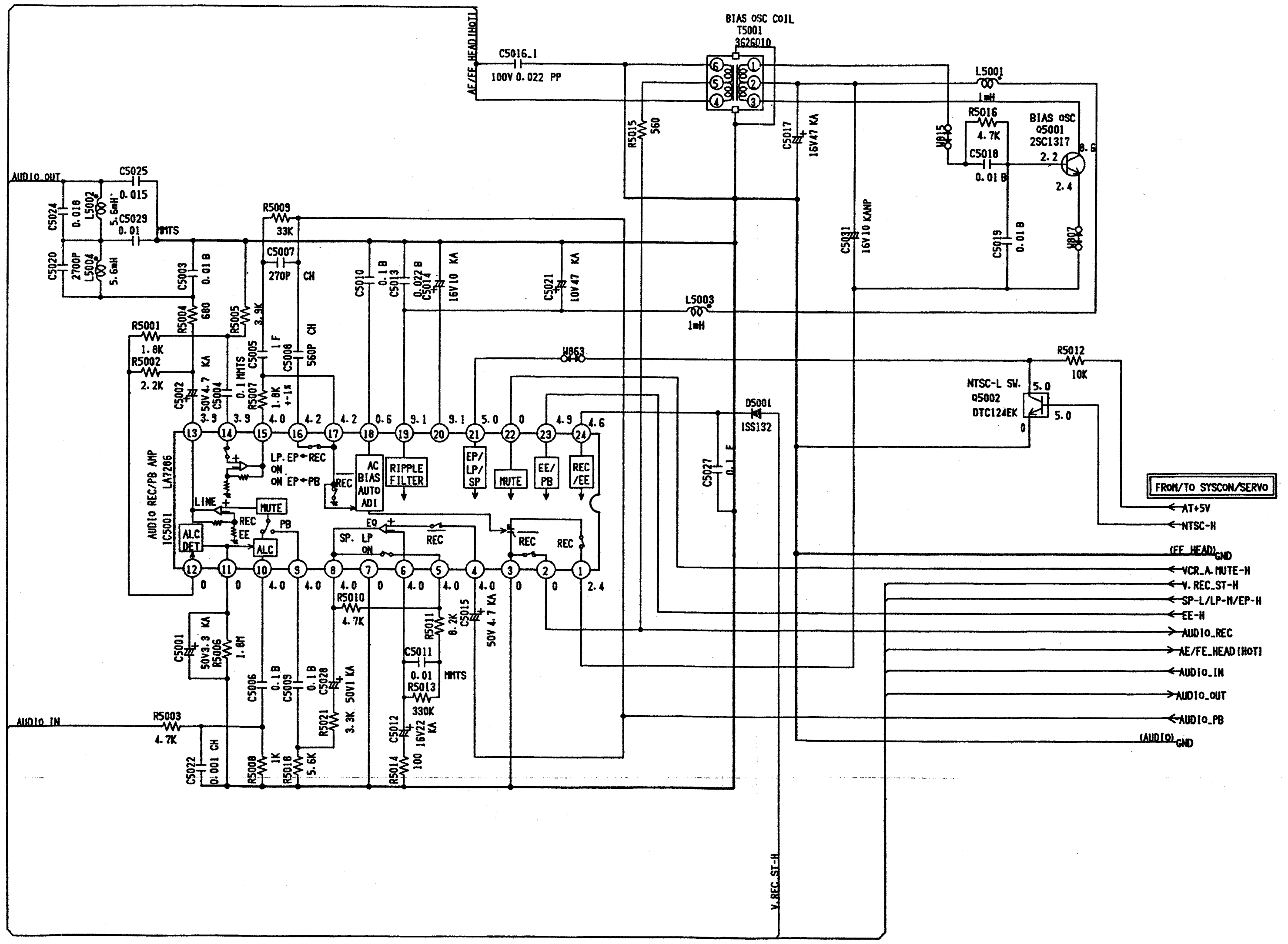
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.


FROM/TO DECK RELAY
CY1002 TMC-N20P-E1
1 DEW
2 GND
3 LM -
4 LM +
5 GND
6 CTL+
7 CTL-
8 CAP/M F/R
9 CAP/M IC GND
10 VCO
11 CAP/M CTL
12 CAP GND
13 CAP VCC
14 CAP FG
15 CAP I LIMIT
16 CAP CTL REF
17 AUDIO REC
18 AUDIO PB
19 AE HEAD -
20 AE HEAD +
TO MODE SW
CP1003 TAS-X05X-D1
1 MS SW3
2 MS SW2
3 MS SW COM
4 MS SW1
5 MS SW0
FROM/TO MICON
CP1001 1-173979-2
1 PLAY LED
2 T-REC LED
3 REC/OTR LED
4 RENTAL LED
5 EXT-H
6 VCR AUDIO MUTE-H
7 S.CLK
8 S.DATA S-T
9 S.DATA T-S
10 STR-B
11 AT+5V
12 GND
FROM/TO MICON
CP1002 173981-8
1 GND
2 UNREG 12V
3 UNREG 12V
4 P.CON+9V
5 AT+5.6V
6 MOTOR GND
7 NC
8 P.CON+5V
FROM/TO AUDIO
EE-H
V.REC_ST-H
AUDIO_IN
SP-L/LP-M/EP-H
VCR_A.MUTE-H
AUDIO_OUT
GND
NTSC-H
AT+5V
FROM/TO OPERATION/BATTERY
CP1005 173981-4
1 BATT-
2 BATT-
3 BATT+
4 BATT+
FROM I/O JACK
CP1004 1-173981-2
1 BATT-
2 BATT-
3 BATT+
4 BATT+
5 AUDIO_IN
6 GND
7 AUDIO_OUT
8 GND
9 VIDEO_IN
10 GND
11 VIDEO_OUT
12 GND
FROM/TO AUDIO
AUDIO.REC
AUDIO.PB
AE/FE.HEAD(HOT)
C1006 0.1 B
V.REF CTL Q1009 2SA1037K
SW Q1010 DTC124EK
R1036 5.6K
R1041 1K
R1015 3.3K
W836
FE HEAD(HOT)
CAP FG
UNREG 12V
R1010 47K
R1009 33K
R1013 27K
C1008 0.022 F
R1006 6.8K
NR1001 RGLD4X472J
MS-SW3
MS-SW2
MS-SW1
MS-SW0
DEW
LOADING MOTOR DRIVER IC1002 OEC9029A
POWER SAVE
COTROL LOGIC
TSD
REGULATER IC1003 PQ20VZ11
EXCLUSIVE IC
C1036 16V100 KA
R1098 1K
C1034 2.7 1W F
W831
W834
UNREG.12V
R1016 33K
C1039 0.33 MMTS
R1024 4.7K
NTSC-H
PLAY LED
REC/OTR LED
T-REC LED
PG TP1003
W804
C1014 22P CH
C1015 22P CH
X1001 8MHZ
MS-SW3
MS-SW2
MS-SW1
MS-SW0
EXT-H
VV-H
DRM ON
R1062 4.7K
FF-H
INV Q1011 DTC124EK
CYL DRIVE
DUMMY V.SYNC
COLOR ROTARY
C1025 0.022 B
C1028 0.1 B
R1068 220K
C1031 1 F
C1034 6.3V100 KS
W850
W851
AT5.6V
R1060 3.3K
R1061 3.3K
D1005 1SS132
R1064 330K
R1065 22K
R1069 27K
R1072 2.2K
R1053 2K
R1078 22K
R1085 33K
FROM/TO Y/C
ENV.DET
SP-L/LP-M/EP-H
V.H.SW
SYNC
DUMMY_V.SYNC
TRICK_PB-H
H.AMP_SW
COLOR_ROTARY
COMP_OUT
CYL_DRIVE
CYL_FG
CYL_PG
V.REC_ST-H
GND
UNREG_12V
NTSC-H
VIDEO_IN
VIDEO_OUT(JACK)
RENTAL-H
VV-H
GND
MOTOR_GND
PB+5V
IC1001 SYSCON/SERVO OEC9031A
1 VSAD
2 BOT
3 CAS DOWN/SERVICE
4 EOT
5 VIDEO ENV DET
6 HI-FI ENV DET
7 DEW
8 SLOW TRACK OFF SET
9 CYL1CAP MOTOR SELECT
10 VDAD
11 DFG OUT
12 DFG IN
13 DPG IN
14 CFG IN
15 CFG OUT
16 VSSA
17 VREF
18 CTL AMP-
19 CTL AMP OUT
20 CTL -
21 CTL +
22 VDPA
23 RESET B
24 TEST
41 COLOR ROTARY
42 DUMMY-V SYNC
43 VDD
44 PWM 0
45 PWM 1
46 DRM ON
47 CAP ON
48 LDM REV
49 LDM FWD
50 CAP LIMIT
51 CAP F/R
52 VV-H
53 EXT IN-L
54 EXT-H
55 MS SW0
56 MS SW1
57 MS SW2
58 MS SW3
59 TAPE IN LED
60 REC LED
61 T-REC LED
62 CLOCK 0
63 CLOCK 1
64 VSS
65 ATR LED
66 PLAY LED
67 REPEAT LED
68 NTSC-H/COLOR TRICK-H
69 REEL-S
70 REEL-T
71 SENS LED
72 CE
73 COUNT P IN
74 S.DATA T-S
75 S.DATA S-T
76 S.CLK
77 COMP
78 SYNC IN
79 COUNT P OUT
80 CTL OUT
40 H.AMP SW
39 AUDIO H.SW
38 VIDEO H.SW
37 V.REC START-H
36 REC-H
35 SP-H
34 LP-H
33 TRICK PB L
32 SEARCH SPEED SW
31 2HEAD/4HEAD
30 BILINGAL-L
29 STEREO L
28 AUDIO DET IN
27 Hi-Fi L
26 V-PB-H
25 PAL-H
H.AMP SW
W849
V.H.SW
R1074 1K
V.REC ST-H
C1035 0.1 B
SP-H
R1081 22K
W843
W844
W845
W846
W847
R1092 56K
W833
R1042 68K
NTSC ENV DET SW Q1019 DTC124EK
TRICK PB 5V DRIVER Q1018 DTA124EK
TRICK PB-H
R1030 10K
PB 5V SW Q1017 2SA984K
R1031 4.7K
PB SW Q1015 DTC124EK
BOT SENSER Q1001 RPT-38PB113
R1014 220 1/2W
W857
C1002 0.001 B
C1004 16V 470 YK
D1001 SLR-938C-4-AB
C1007 0.001 B
BUFFER Q1004 2SC536KG
EOT SENSER Q1003 RPT-38PB113
SENSER LED DRIVER Q1002 2SC2872S
R1046 33 1/2W
R1004 10K
R1005 10K
C1009 0.01
R1007 470
R1008 10K
R1034 68K
R1012 22K
R1001 39K
R1003 18K
GND TP1001
REEL-S
REEL-T
STR-B
S.DATA T-S
S.DATA S-T
S.CLK
R1017 100
EOT
BOT
SYNC
R1028 100
C1012 470P B
R1029 100
R1034 100
C1011 470P B
C1013 470P B
R1027 1K
R1032 22K
SERVICE TP1002
R1019 10K
C1001 0.33 MMTS
R1043 220K
R1021 56K
R1031 56K
R1033 8.2K
R1030 10K
REC/TAB SW S1002 MPU10230MLB0
CASS DOWN SW S1001 MPU10230MLB0
R1020 270
SUPPLY REEL SENS Q1006 GP1S94
TAKE UP REEL SENS Q1008 GP1S94
REEL-T
REEL-S
BOT
EOT
ENV.DET
DEW
R1044 5.6K
R1045 3.3K
W842
W829
D1004 1SS132
R1054 4.7K
R1056 100K
W830
R1059 100K
C1022 100P CH
C1021 50V1 KSNP
R1059 10K
C1024 16V47 KS
R1063 1K
C1026 16V22 KS
C1027 120P CH
R1066 560
R1070 560
R1067 10K
C1030 0.001 B
C1033 0.1 B
R1073 100K
D1006 1SS132
R1048 10K
C1016 0.001 B
C1018 0.01 B
C1019
W838
C1032 0.1 B
DRM ON
CYL FG
CYL PG
CAP FG
CTL -
CTL +
PCB010 VM6115
A B C D E F G H
1 2 3 4 5 6 7 8

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK. (PAL MODE)

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

AUDIO SCHEMATIC DIAGRAM


AE/FE_HEAD(HOT)
C5016_1
100V 0.022 PP
BIAS OSC COIL
T5001
3626010
R5015
560
C5017
16V47 KA
L5001
1mH
R5016
4.7K
C5018
0.01 B
W815
BIAS OSC
Q5001
2SC1317
2.2
8.6
2.4
C5031
16V10 KANP
C5019
0.01 B
W807
AUDIO OUT
C5025
0.015
C5024
0.018
L5002
5.6mH
C5029
0.01
MMTS
C5020
2700P
L5004
5.6mH
C5003
0.01 B
R5009
33K
C5007
270P
CH
C5010
0.1 B
C5013
0.022 B
C5014
16V10 KA
C5021
10V47 KA
L5003
1mH
R5004
680
R5005
3.9K
R5001
1.8K
R5002
2.2K
C5002
50V4.7 KA
C5004
0.1 MMTS
C5005
1 F
R5007
1.8K +-1%
C5008
560P CH
W863
R5012
10K
NTSC-L SW.
Q5002
DTC124EK
5.0
5.0
0
D5001
1SS132
C5027
0.1 F
AUDIO REC/PB AMP
IC5001
LA7286
3.9
3.9
4.0
4.2
4.2
0.6
9.1
9.1
5.0
0
4.9
4.6
13
14
15
16
17
18
19
20
21
22
23
24
LP. EP←REC
ON
ON EP←PB
REC
AC BIAS AUTO ADI
RIPPLE FILTER
EP/ LP/ SP
MUTE
EE/ PB
REC /EE
LINE
MUTE
REC
PB
EE
ALC DET
ALC
EQ
SP. LP
ON
REC
REC
REC
12
11
10
9
8
7
6
5
4
3
2
1
0
0
4.0
4.0
4.0
0
4.0
4.0
4.0
0
0
2.4
R5010
4.7K
R5011
8.2K
C5015
50V 4.7 KA
C5001
50V3.3 KA
R5006
1.8M
C5006
0.1 B
C5009
0.1 B
C5028
50V1 KA
C5011
0.01
MMTS
R5013
330K
R5021
3.3K
C5012
16V22 KA
AUDIO IN
R5003
4.7K
C5022
0.001 CH
R5008
1K
R5018
5.6K
R5014
100
V.REC_ST-H
FROM/TO SYSCON/SERVO
AT+5V
NTSC-H
(FE HEAD)GND
VCR_A.MUTE-H
V.REC_ST-H
SP-L/LP-M/EP-H
EE-H
AUDIO_REC
AE/FE_HEAD(HOT)
AUDIO_IN
AUDIO_OUT
AUDIO_PB
(AUDIO)GND

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE
CRITICAL FOR SAFETY. USE ONES
DESCRIBED IN PARTS LIST ONLY.

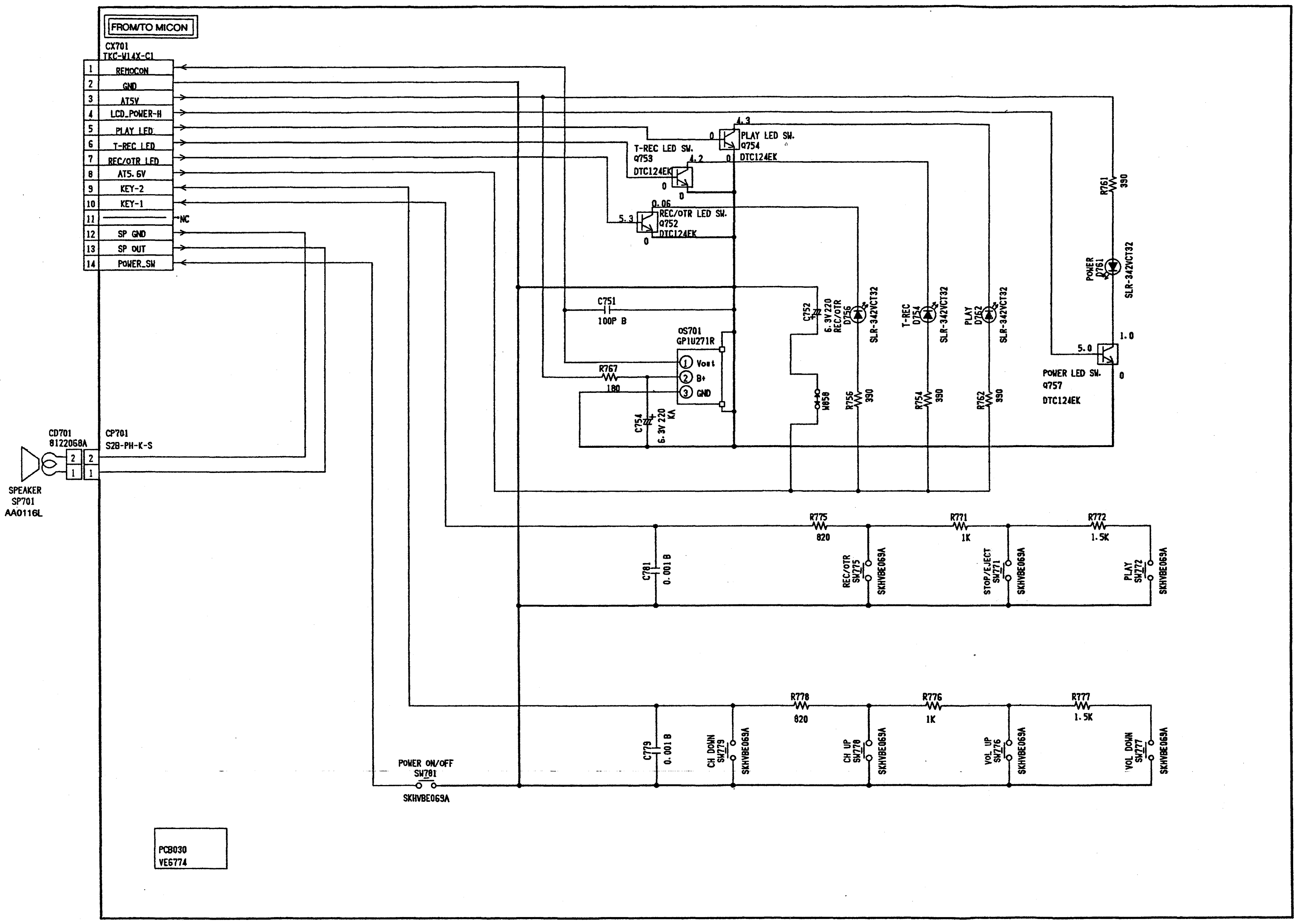
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.

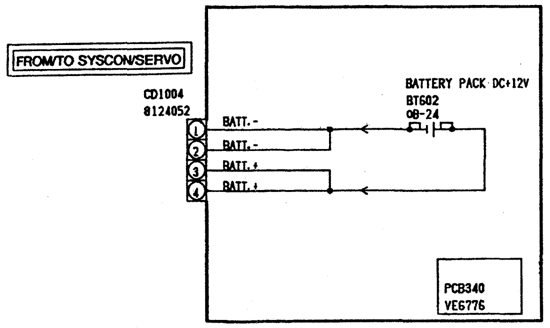
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

PCB010
VM6115

OPERATION／BATTERY SCHEMATIC DIAGRAM


FROM/TO MICON
CX701
TKC-W14X-C1
1 REMOCON
2 GND
3 AT5V
4 LCD_POWER-H
5 PLAY LED
6 T-REC LED
7 REC/OTR LED
8 AT5.6V
9 KEY-2
10 KEY-1
11 NC
12 SP GND
13 SP OUT
14 POWER_SW
PLAY LED SW.
Q754
DTC124EK
4.3
0
T-REC LED SW.
Q753
DTC124EK
4.2
REC/OTR LED SW.
Q752
DTC124EK
0.06
5.3
C751
100P B
OS701
GP1U271R
① Vout
② B+
③ GND
R767
180
C754
6.3V 220
KA
C752
6.3V 220
W858
REC/OTR
D756
SLR-342VCT32
T-REC
D754
SLR-342VCT32
PLAY
D762
SLR-342VCT32
R756
390
R754
390
R762
390
R761
390
POWER
D761
SLR-342VCT32
POWER LED SW.
Q757
DTC124EK
5.0
1.0
CD701
8122068A
CP701
S2B-PH-K-S
SPEAKER
SP701
AA0116L
R775
820
R771
1K
R772
1.5K
C781
0.001 B
REC/OTR
SW775
SKHVBE069A
STOP/EJECT
SW771
SKHVBE069A
PLAY
SW772
SKHVBE069A
R778
820
R776
1K
R777
1.5K
C779
0.001 B
CH DOWN
SW779
SKHVBE069A
CH UP
SW778
SKHVBE069A
VOL UP
SW776
SKHVBE069A
VOL DOWN
SW777
SKHVBE069A
POWER ON/OFF
SW781
SKHVBE069A
PCB030
VE6774

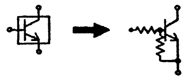

FROM/TO SYSCON/SERVO
CD1004
8124052
BATT. -
BATT. -
BATT. +
BATT. +
BATTERY PACK DC+12V
BT602
OB-24
PCB340
VE6776

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

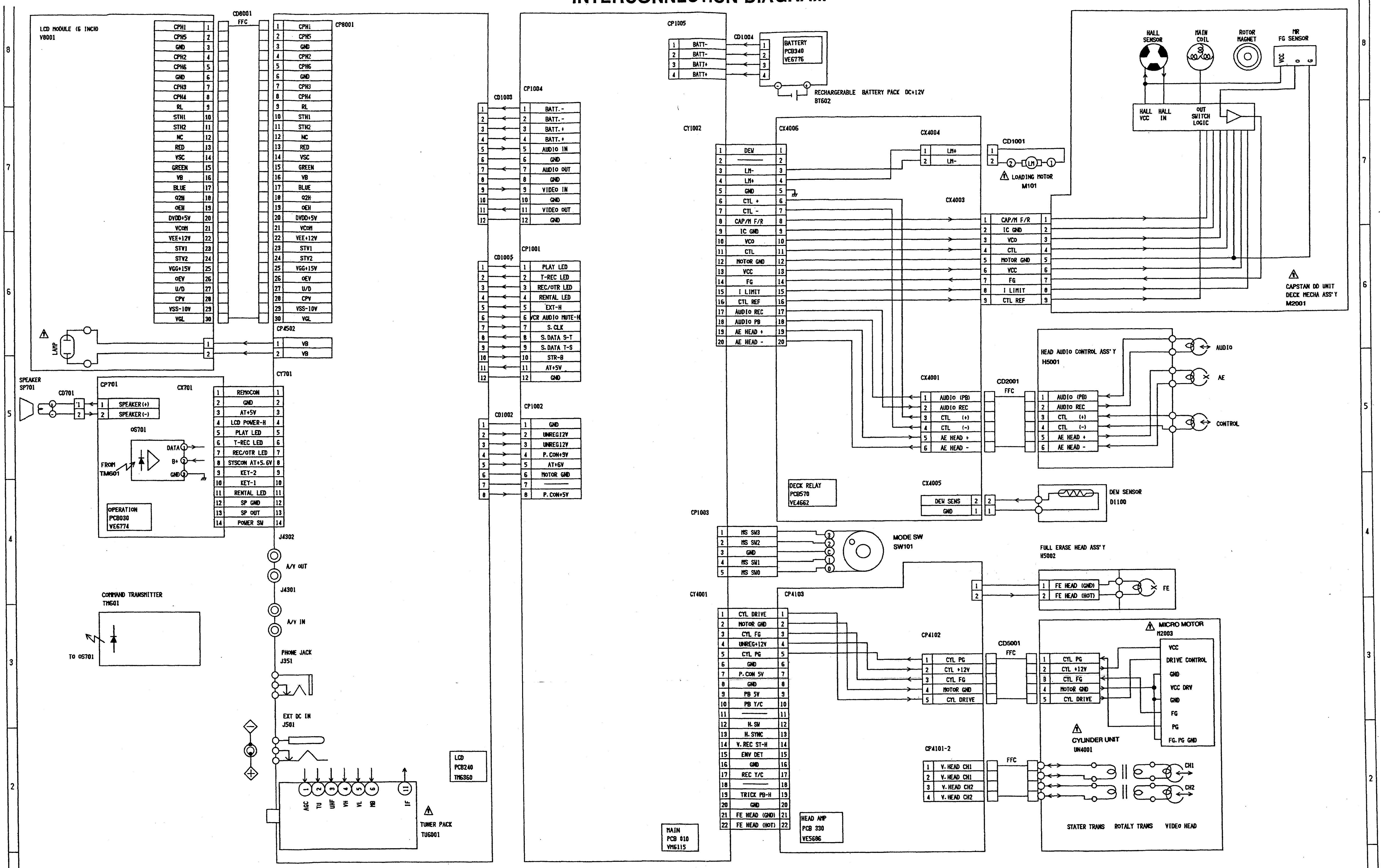
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



INTERCONNECTION DIAGRAM


LCD MODULE (6 INCH)
V8001
CD8001
FFC
CP8001
CPH1
CPH5
GND
CPH2
CPH6
CPH3
CPH4
RL
STH1
STH2
NC
RED
VSC
GREEN
VB
BLUE
Q2H
OEH
DVDD+5V
VCOM
VEE+12V
STV1
STV2
VGG+15V
OEV
U/D
CPV
VSS-10V
VGL
LAMP
CP4502
VB
SPEAKER
SP701
CD701
CP701
SPEAKER(+)
SPEAKER(-)
CX701
OS701
DATA
B+
GND
FROM TM601
OPERATION
PCB030
VE6774
REMOCON
GND
AT+5V
LCD POWER-H
PLAY LED
T-REC LED
REC/OTR LED
SYSCON AT+5.6V
KEY-2
KEY-1
RENTAL LED
SP GND
SP OUT
POWER SW
CY701
J4302
A/V OUT
J4301
A/V IN
PHONE JACK
J351
EXT DC IN
J501
AGC
TU
UHF
VH
VL
MB
IF
TUNER PACK
TU6001
LCD
PCB240
TM6360
COMMAND TRANSMITTER
TM601
TO OS701
CD1003
CP1004
BATT.-
BATT.+
AUDIO IN
AUDIO OUT
VIDEO IN
VIDEO OUT
CD1005
CP1001
PLAY LED
T-REC LED
REC/OTR LED
RENTAL LED
EXT-H
VCR AUDIO MUTE-H
S.CLK
S.DATA S-T
S.DATA T-S
STR-B
AT+5V
CD1002
CP1002
UNREG12V
P.CON+5V
AT+6V
MOTOR GND
CP1005
CD1004
BATT-
BATT+
BATTERY
PCB340
VE6776
RECHARGERABLE BATTERY PACK DC+12V
BT602
CY1002
CX4006
DEW
LM-
LM+
CTL +
CTL -
CAP/M F/R
IC GND
VCO
CTL
MOTOR GND
VCC
FG
I LIMIT
CTL REF
AUDIO REC
AUDIO PB
AE HEAD +
AE HEAD -
CX4004
CD1001
LOADING MOTOR
M101
CX4003
HALL SENSOR
MAIN COIL
ROTOR MAGNET
MR FG SENSOR
HALL VCC
HALL IN
OUT SWITCH LOGIC
CAPSTAN DD UNIT
DECK MECHA ASS'Y
M2001
HEAD AUDIO CONTROL ASS'Y
H5001
AUDIO
AE
CONTROL
CX4001
CD2001
FFC
AUDIO (PB)
AUDIO REC
CTL (+)
CTL (-)
DECK RELAY
PCB570
VE4662
CX4005
DEW SENS
DEW SENSOR
D1100
CP1003
MS SW3
MS SW2
MS SW1
MS SW0
MODE SW
SW101
FULL ERASE HEAD ASS'Y
H5002
FE HEAD (GND)
FE HEAD (HOT)
FE
CY4001
CP4103
CYL DRIVE
CYL FG
UNREG+12V
CYL PG
P.CON 5V
PB 5V
PB Y/C
H.SW
H.SYNC
V.REC ST-H
ENV DET
REC Y/C
TRICK PB-H
CP4102
CD5001
CYL +12V
MICRO MOTOR
M2003
DRIVE CONTROL
VCC DRV
PG
FG.PG GND
CYLINDER UNIT
UN4001
CP4101-2
V.HEAD CH1
V.HEAD CH2
CH1
CH2
STATER TRANS
ROTALY TRANS
VIDEO HEAD
MAIN
PCB 010
VM6115
HEAD AMP
PCB 330
VE5686

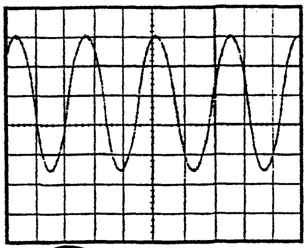
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY. USE ONES DESCRIBED IN PARTS LIST ONLY.

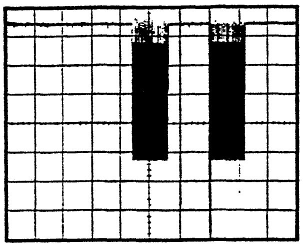
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE. N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

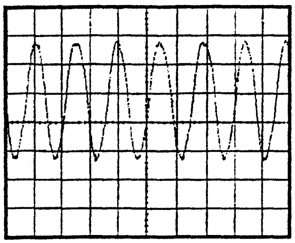
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

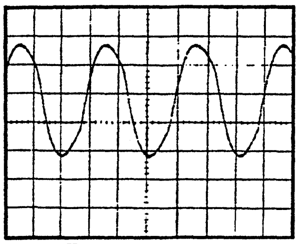
WAVEFORMS

MICON

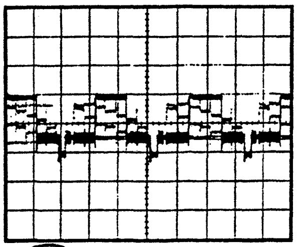

① 1V. 100ns/div

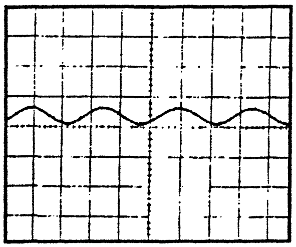

② 1V. 1ms/div

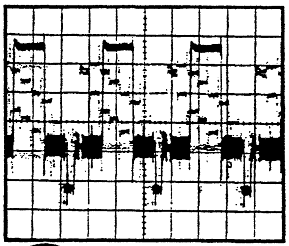

② 1V. 100ns/div

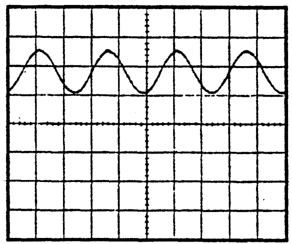

③ 1V. 10us/div

TUNER/AUDIO

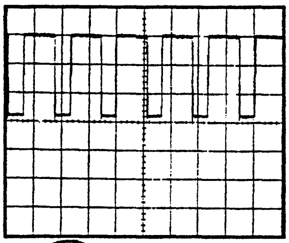

④ 500mV. 20us/div


⑤ 1V. 1ms/div

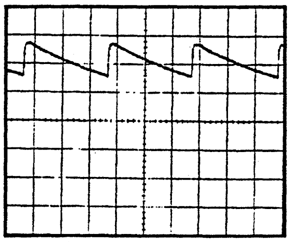

⑥ 200mV. 20us/div

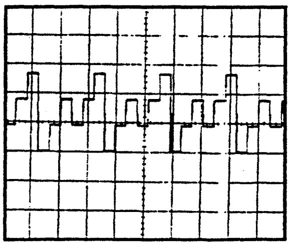

⑦ 1V. 1ms/div

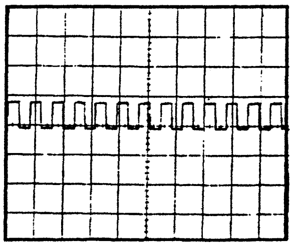
POWER


⑧ 5V. 10us/div

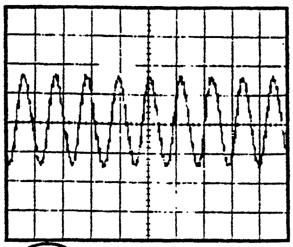
LCD

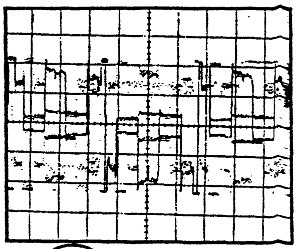

⑨ 2V. 10us/div

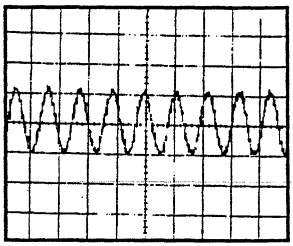

⑩ 2V. 5ms/div

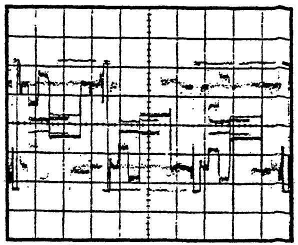

⑪ 2V. 5ms/div

RADIO

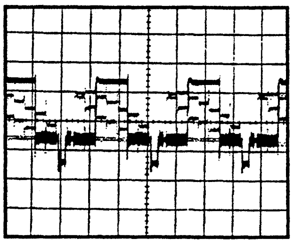

⑫ 100mV. 500ns/div

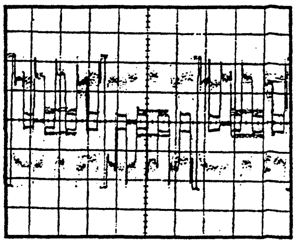

⑱ 2V. 20us/div

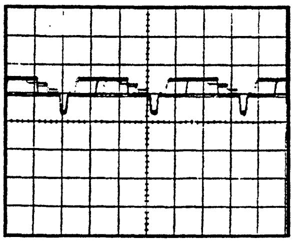

⑬ 100mV. 500ns/div

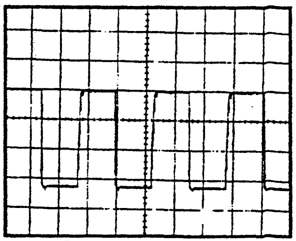

⑲ 2V. 20us/div

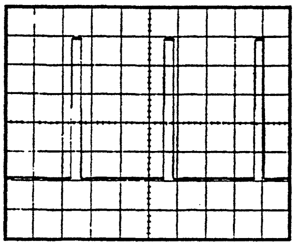
CHROMA

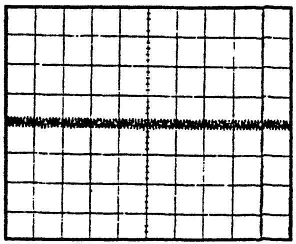

⑭ 200mV. 20us/div

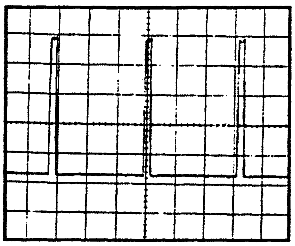

⑳ 2V. 20us/div

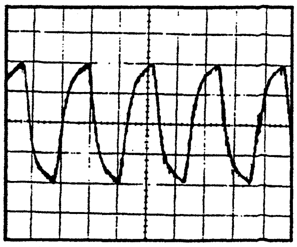

⑮ 1V. 20us/div


㉑ 2V. 50us/div


⑯ 1V. 20us/div

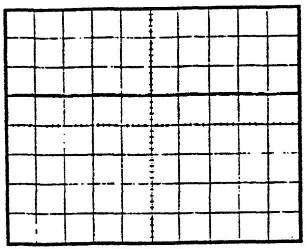

㉓ 1V. 2us/div

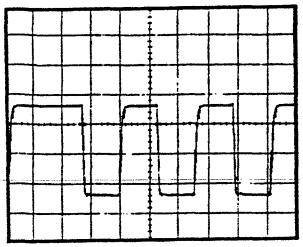

⑰ 1V. 20us/div


㉓ 100mV. 100ns/div

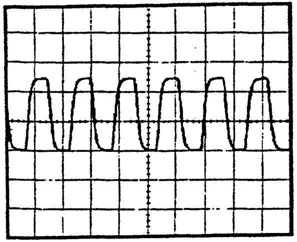
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

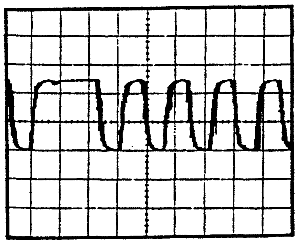
WAVEFROMS

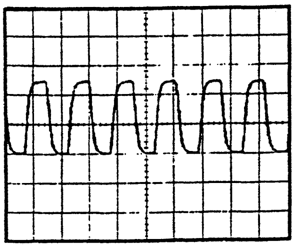

㉔ 2V. 50us/div

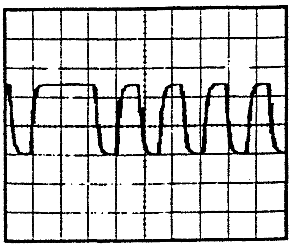

㉕ 2V. 50us/div

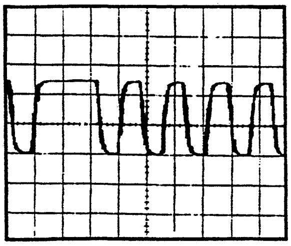
TIMING CONTROLLER

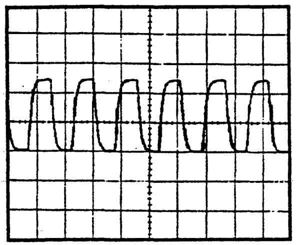

㉖ 2V. 200ns/div

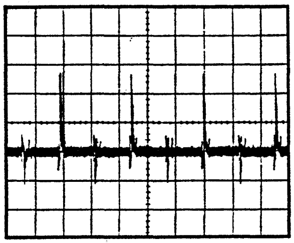

㉗ 2V. 200ns/div

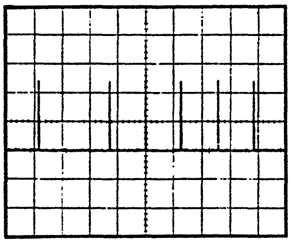

㉘ 2V. 200ns/div

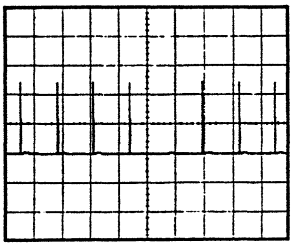

㉙ 2V. 200ns/div

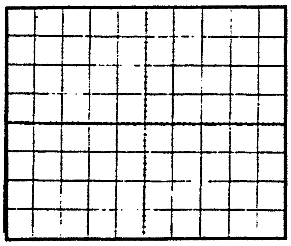

㉚ 2V. 200ns/div

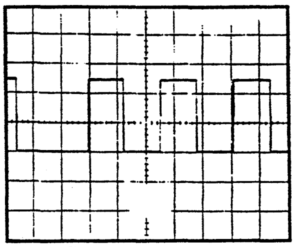

㉛ 2V. 200ns/div

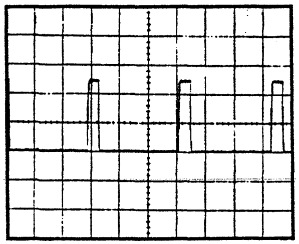

㉜ 500mV. 50us/div

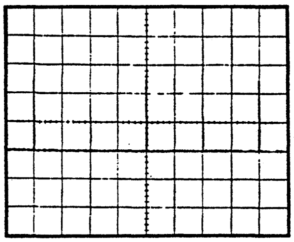

㉝ 2V. 50us/div

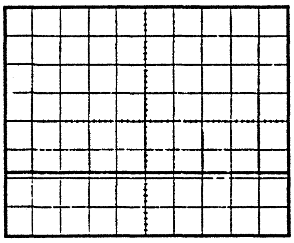

㉞ 2V. 50us/div

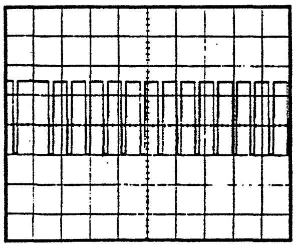

㉟ 2V. 50us/div

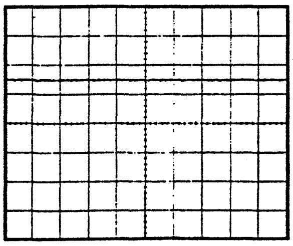

㊱ 2V. 50us/div

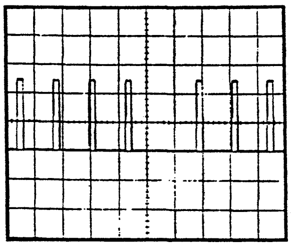

㊲ 2V. 20us/div

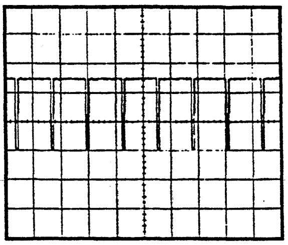

㊳ 2V. 10ms/div

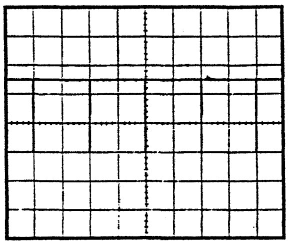

㊴ 5V. 10ms/div

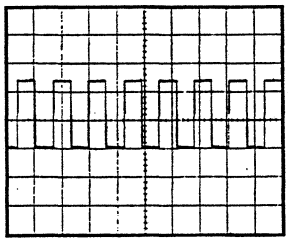

㊵ 2mV. 100us/div


㊶ 2V. 50us/diV

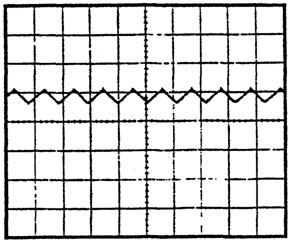

㊷ 2V. 50us/div

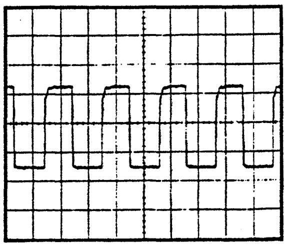

㊸ 2V. 50us/div


㊹ 2V. 10ms/div


㊺ 2V. 100us/div

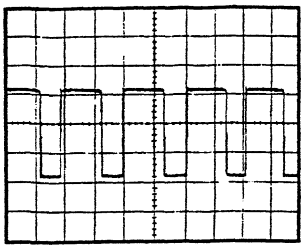
LCD POWER


㊻ 1V. 10us/diV

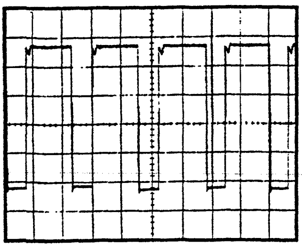

㊼ 5V. 5us/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

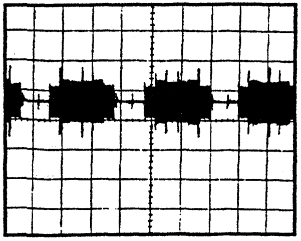


㊽ 5V. 5us/div



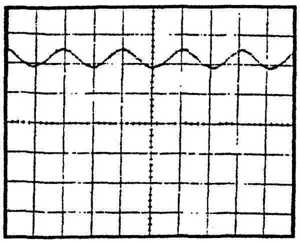
㊾ 2V. 2ms/div

CHROMA

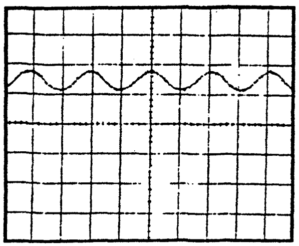


㊿ 1V. 20us/div

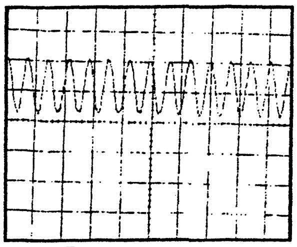
RADIO



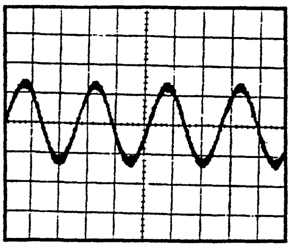
(51) 1V. 500ns/div



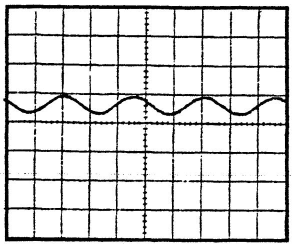
(52) 1V. 500ns/div



(53) 2V. 200ns/div

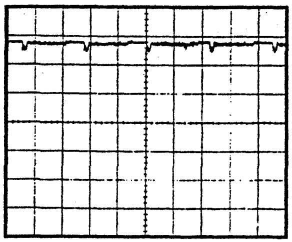


(54) 50mV. 1ms/div



(55) 500mV. 1ms/div

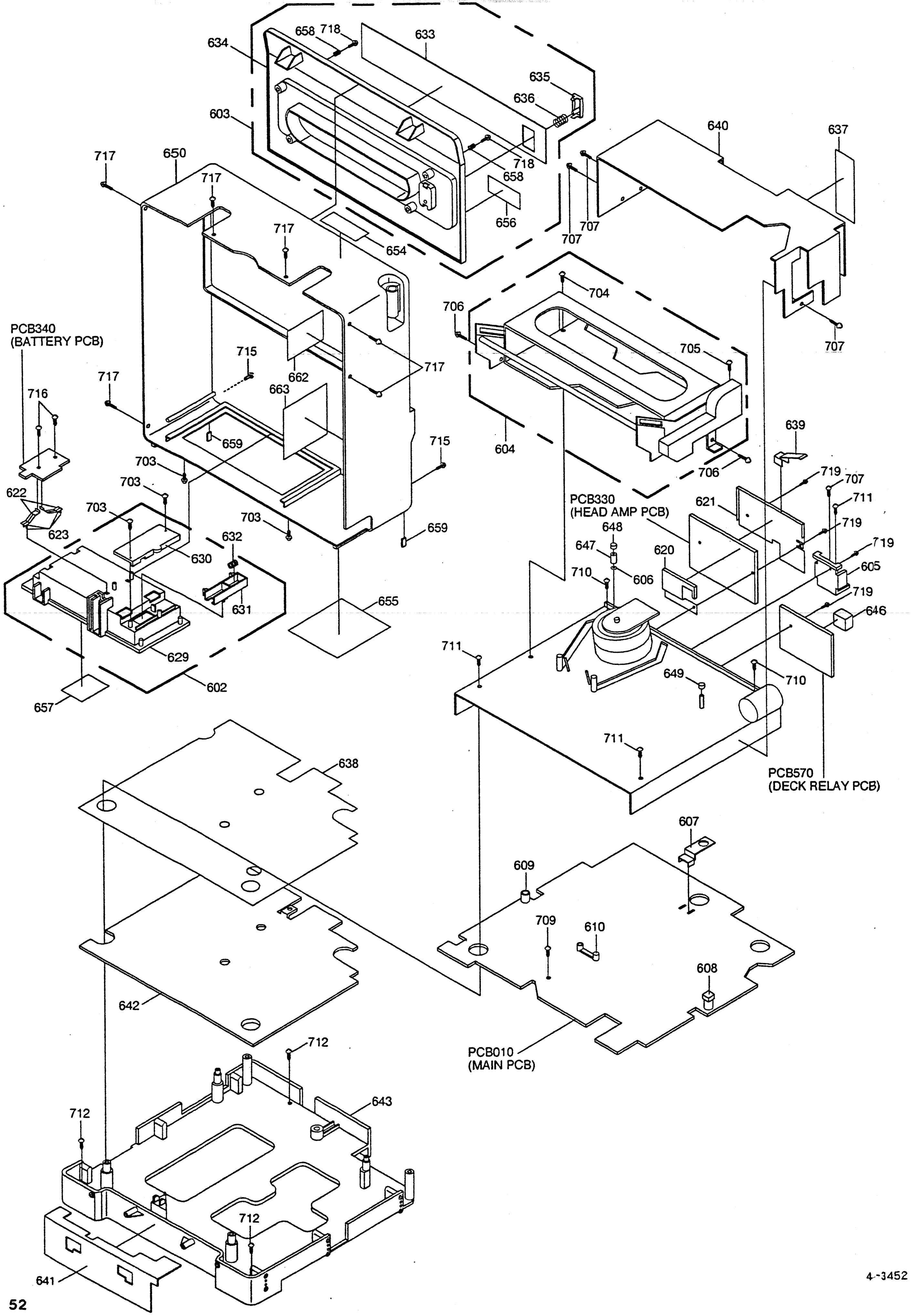
LCD POWER



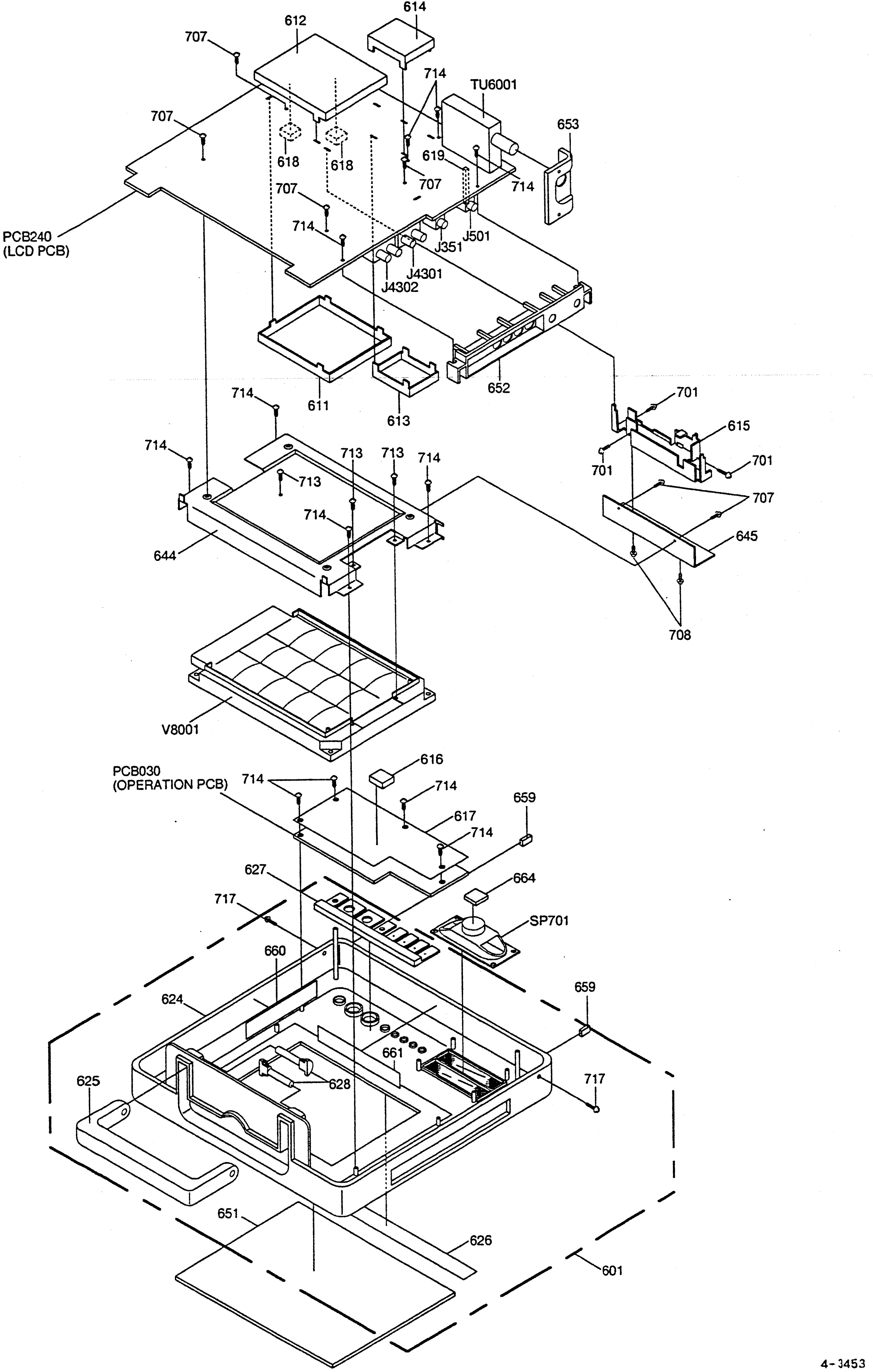
(56) 2V. 2ms/div

NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW


634
658
718
633
635
636
603
640
637
718
658
717
650
717
656
707
707
717
654
707
704
706
PCB340
(BATTERY PCB)
715
705
717
662
717
663
716
715
659
604
639
703
706
719
707
703
PCB330
(HEAD AMP PCB)
711
622
621
648
719
703
632
647
620
719
623
703
630
659
710
606
605
631
719
655
646
711
629
649
710
602
657
711
PCB570
(DECK RELAY PCB)
638
607
609
709
610
608
642
712
PCB010
(MAIN PCB)
643
712
712
641
4-3452

MECHANICAL EXPLODED VIEW

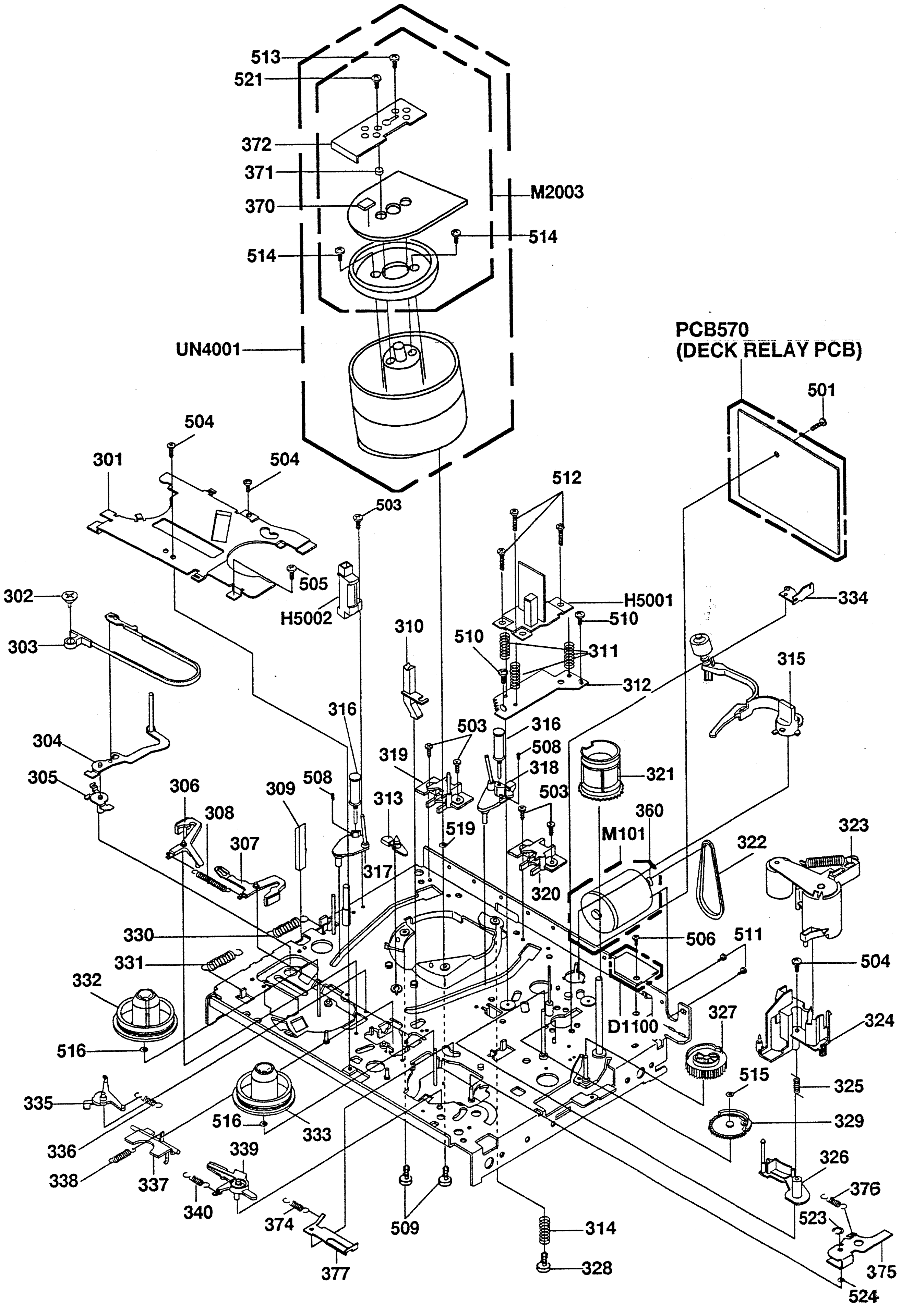

614
612
707
714
TU6001
653
707
618
618
619
707
714
707
714
J501
J351
PCB240
(LCD PCB)
J4301
J4302
652
611
613
714
701
615
714
713
713
714
701
701
713
707
714
645
644
708
V8001
616
PCB030
(OPERATION PCB)
714
714
659
617
714
627
664
717
SP701
660
659
624
661
625
628
717
651
626
601

4-3453

MECHANICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
501	A53102A400	AC ADAPTOR ASS'Y
502	753WSA0059	SHIELD.MAIN(NO.1)
503	753WSA0060	SHIELD.MAIN(NO.2)
504	753WUA0030	SPRING.IC
505	753WUA0041	SPRING.BATTERY ASS'Y
506	800JR00078	CUSHION.CON. 8*8*6T
507	701KPA0308	CABINET.TOP
508	701KPA0309	CABINET.BOTTOM
509	7222022343	SHEET.RATING (AD)
510	7230006433	PLATE.DISPLAY
601	A53102A720	CABINET.FRONT ASS'Y
602	A53102A730	CABINET.BACK ASS'Y
603	A53102A780	LID.CASSETTE ASS'Y
604	A53102A650	TOP LOADING (TL-4)
605	762WSA0024	ANGLE.DECK BACK
606	82Q214005N	POLYSLIDER WASHER 2.1*4.0*T0.5
607	753WSA0058	PLATE.EARTH SYSCON
608	754WPA0010	COVER.LED (R)
609	754WPA0011	COVER.LED (L)
610	850P700031	HOLDER.LED
611	752JSA0372	SHIELD.CASE DC/DC
612	752JSA0373	SHIELD.COVER DC/DC
613	752JSA0376	SHIELD.CASE IF
614	752JSA0377	SHIELD.COVER IF
615	----	HEAT SINK
616	800JF00166	CUSHION-A
617	800JF00218	SHEET.OPERATION
618	800JR00010	RUBBER.COIL
619	----	STYLE PIN
620	753WSA0055	SHIELD.CASE HEAD AMP
621	753WSA0075	COVER.HEAD AMP SHIELD
622	744JUD0001	SPRING.BATTERY
623	773JEA0002	PIN.BATTERY
624	701JPJ0907	CABINET.FRONT
625	705JPB0032	HANDLE
626	711JND0015	PLATE.DISPLAY
627	735JPA0590	BUTTON.DECK
628	769WPA0011	HANDLE HOLDER
629	703JPA0019	CABINET.BATTERY
630	703JPA0020	COVER.BATTERY
631	735JPA0592	KNOB.EJECT
632	742JUA0046	SPRING.EJECT
633	711JND0016	PLATE.WINDOW
634	712JPB0028	LID.CASSETTE
635	735JPA0593	BUTTON.STAGE
636	742JUA0048	SPRING STAGE
637	7230006261	SHEET.LCD
638	7230006445	SHEET.SYSCON
639	744WUA0001	SPRING.EARTH TOP
640	752JSA0378	SHIELD.DECK
641	752JSA0379	SHIELD.TOP
642	752JSA0380	SHIELD.SYSCON
643	761JPA0127	HOLDER.DECK
644	762JSA0082	BRACKET.LCD
645	763JSA0025	ANGLE
646	800JF00177	NEO SPONGE
647	850P400367	ROLLER.IMPEDANCE
648	850P400420	CAP.IMPEDANCE
649	850P400421	CAP.P4
650	702JPJ0071	CABINET.BACK
651	711JND0014	PLATE.ACRYL
652	711JPA0089	PLATE.JACK
653	711JPA0090	PLATE.TUNER
654	7220001081	SHEET.ANTENNA
655	7222022317	SHEET.RATING
656	7230006399	SHEET.LID CASSETTE
657	7240001104	SHEET.CAUTION BATTERY
658	742JUA0049	SPRING.LID
659	800JFA0038	CUSHION.LEG
660	800JFQ0001	SHEET.FRONT SIDE
661	800JFQ0002	SHEET.FRONT BOTTOM
662	800JFQ0003	SHEET.BACK SIDE A
663	800JFQ0004	SHEET.BACK SIDE B
664	800JR00069	CUSHION.SPEAKER
701	8107230804	SCREW.TAP TITE(S) BIND 3*8
702	8110630A44	SCREW.TAP TITE(P) BRAZIER 3*14
703	8149120602	SCREW.TAP TITE(P) #0 P3 PAN 2*6
704	8107226504	SCREW.TAP TITE(S) BIND 2.6*5
705	8107226804	SCREW.TAP TITE(S) BIND 2.6*8
706	8107230404	SCREW.TAP TITE(S) BIND 3*4
707	8107230504	SCREW.TAP TITE(S) BIND 3*5
708	8107330604	SCREW.TAP TITE(S) FLAT 3*6
709	8110330804	SCREW.TAP TITE(P) FLAT 3*8
710	8117D30A04	SCREW.TAPPING(BO) WH8 BRAZIER 3*10
711	8117140A24	SCREW.TAPPING(BO) PAN 4*12
712	8110130A44	SCREW.TAP TITE(P) PAN 3*14
713	8110220504	SCREW.TAP TITE(P) BIND 2*5
714	8110230A04	SCREW.TAP TITE(P) BIND 3*10
715	8110230A42	SCREW TAP TITE(P) BIND 3*14
716	8110230604	SCREW.TAP TITE(P) BIND 3*6
717	8110430A02	SCREW.TAP TITE(P) OVERL 3*10
718	8140117352	SCREW.CAMERA M1.7*0.35*3.5
719	8107230604	SCREW.TAP TITE(S) BIND 3*6
---	J2860602	GUARANTEE CARD
---	J5310201	INSTRUCTION BOOK
---	J5310207	QUICK SET-UP SHEET
---	791JHA0082	GIFT SHEET
---	792JHA0260	PACKAGE
---	793JCD2478	GIFT BOX

CHASSIS EXPLODED VIEW (TOP VIEW)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M2003
UN4001
PCB570
(DECK RELAY PCB)
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H5002
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H5001
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M101
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D1100
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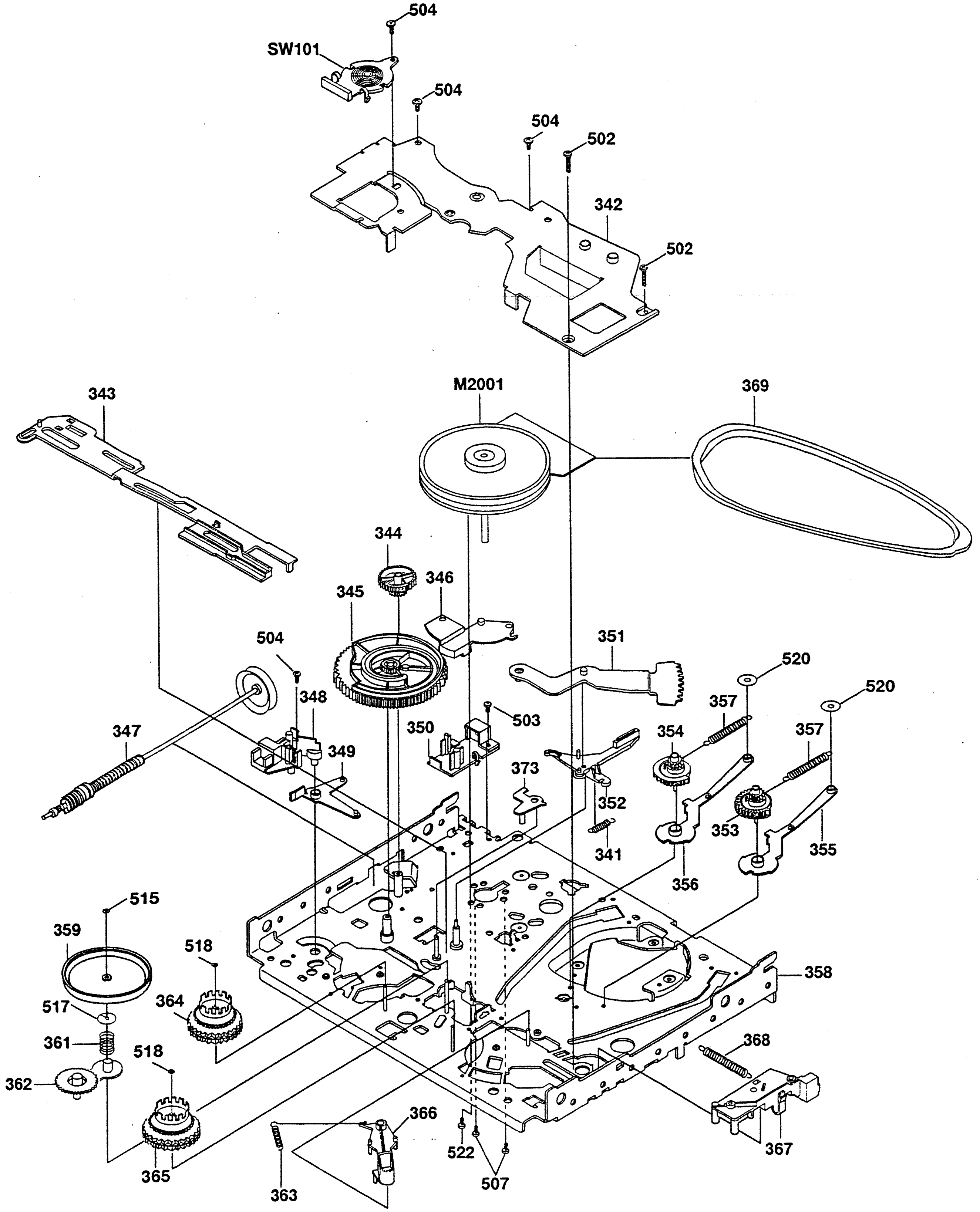
CHASSIS EXPLODED VIEW (BOTTOM VIEW)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SW101
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M2001
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CHASSIS REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
301	850P600471	BRACKET,BRAKE
302	850P400358	ADJUST.TENSION
303	850A400122	TENSION BAND ASS'Y
304	850A400124	TENSION ARM ASS'Y
305	850A400123	TENSION LEVER 2 ASS'Y
306	850A600155	MAIN BRAKE S ASS'Y
307	850A600156	MAIN BRAKE T ASS'Y
308	850P800252	SPRING.MAIN BRAKE
309	850P900564	REFLECTOR.EOT
310	850P400411	REFLECTOR.LED 2
311	850P800269	SPRING.AC HEAD
312	850P500060	BASE.AC HEAD
313	850P000394	POST.CASS GUIDE L
314	850P800245	SPRING.AZIMUTH 2
315	850A500013	AHC ASS'Y
316	850A400102	GUIDE ROLLER ASS'Y
317	850A400126	BASE.S INCLINED ASS'Y
318	850A400127	BASE.T INCLINED ASS'Y
319	850A400149	S CATCHER ASS'Y
320	850P400401	CATCHER T
321	850P400343	CAM.PINCH ROLLER
322	850P600487	BELT.LOADING
323	850A400151	PINCH ROLLER BLOCK
324	850P900541	CASS.OPENER
325	850P800264	SPRING.P5
326	850A400120	P5 ARM ASS'Y
327	850P400342	CAM GEAR
328	8146230A14	JOINT SCREW BIND M3*11
329	850P400344	CAM.P5
330	850P400356	SPRING.TENSION ARM 2
331	850P400357	SPRING.TENSION ARM 1
332	850P200216	REEL S
333	850P200217	REEL T
334	850P400402	CATCHER.P5 2
335	850P600465	SUB BRAKE S
336	850P800253	SPRING.S-S BRAKE
337	850P200214	ARM.JOINT
338	850P800262	SPRING.JOINT ARM
339	850A600157	SUB BRAKE T ASS'Y
340	850P800254	SPRING.T-S BRAKE
341.	850P800255	SPRING.CAP BRAKE
342	850P600485	PLATE.BOTTOM
343	850A600160	ROD.MAIN ASS'Y
344	850P400341	GEAR.MIDDLE
345	850P600472	CAM.MAIN
346	850P600468	LEVER.MAIN BRAKE
347	850A600159	WORM ASS'Y
348	850P600483	BRACKET.WORM F
349	850P600474	LEVER.RATCHET
350	850P600484	BRACKET.WORM R
351	850P300151	LEVER.LOADING
352	850A600174	CAPSTAN BRAKE ASS'Y (M.J)
353	850P300152	GEAR.LOADING S
354	850P300153	GEAR.LOADING T
355	850A300053	LOADING ARM S ASS'Y
356	850A300054	LOADING ARM T ASS'Y
357	850P800263	SPRING.LOADING GEAR
358	850A000221	MAIN CHASSIS ASS'Y
359	850P200213	CENTER PULLEY
360	850P600486	PULLEY.LDM 5
361	850P800261	SPRING.C-PULLEY
362	850A200061	ARM IDLER ASSY 2
363	850P800270	SPRING.LEVER TENSION
364	850A200050	CLUTCH GEAR T ASS'Y
365	850A200049	CLUTCH GEAR S ASS'Y
366	850P400360	LEVER.TENSION
367	850P400359	HOLDER.TENSION
368	850P800256	SPRING.MAIN ROD
369	850P200215	BELT.CAPSTAN
370	800JF00212	CUSHION-D
371	850PAA0266	COLLAR SHIELD
372	850PAA0281	TAPE GUIDE
373	850P400365	PINION.TENSION 3
374	850P800266	SPRING.LEVER TENSION 3
375	850A400152	TENSION ARM 3 (LCD) ASS'Y
376	850P800305	SPRING.TENSION ARM 3 (LCD)
377	850P400364	LEVER.TENSION 3
501	8107230604	SCREW.TAP TITE(S) BIND 3*6
502	8109226A64	SCREW.TAP TITE(B) BIND 2.6*16
503	8107226804	SCREW.TAP TITE(S) BIND 2.6*8
504	8107226604	SCREW.TAP TITE(S) BIND 2.6*6
505	8107123604	SCREW.TAP TITE(S) PAN 2.3*6
506	8107226404	SCREW.TAP TITE(S) BIND 2.6*4
507	8110126604	SCREW.TAP TITE(P) PAN 2.6*6
508	815DJ20302	SET SCREW 6 CUP POINT M2*3
509	810A130604	SCREW/WASHER(A) M3*6
510	810B126604	SCREW/WASHER(B) M2.6*6.0
511	8102130304	SCREW.PAN M3.0*3.0
512	8102126A04	SCREW.PAN M2.6*10
513	810A123504	SEMS A M2.3*5.0
514	850PAA0197	SCREW.MOTOR M3*5
515	82P266005N	POLYSLIDER WASHER(CUT) 2.6*6.0*T0.5
516	82Q264713N	POLYSLIDER WASHER 2.6*4.7*T0.13
517	82P26A005N	POLYSLIDER WASHER(CUT) 2.6*10*T0.5
518	82P166005N	POLYSLIDER WASHER(CUT) 1.6*6.0*T0.5
519	82Q3154B3N	POLYSLIDER WASHER 3.1*5.4*T0.13
520	83CST40000	CS-RING 4.0
521	810A123604	SCREW/WASHER(A) M2.3*6.0
522	8109126804	SCREW.TAP TITE(B)PAN 2.6*8
523	83ETW25000	E-RING 2.5
524	82Q518004N	POLYSLIDER WASHER 5.1*8.0*T0.4
CD1001	068722058A	CORD EIS CONNECTOR 8722058A
CD2001	122W060803	CORD JUMPER 2W060803
CD5001	122L050901	CORD JUMPER 2L050901
CX4001	0694760509	CONNECTOR PCB SIDE 177640-6
CX4003	069779M010	CONNECTOR PCB SIDE TKC-F09X-L1
CX4004	0694220139	CONNECTOR PCB SIDE 173979-2
CX4005	069R240519	CONNECTOR PCB SIDE 52288-0211
CX4006	0697FK0080	CONNECTOR PCB SIDE TMC-N20X-B1
D1100	DAK0000150	DEW SENSOR HDP-05-C8
H5001	1523D91029	HEAD AUDIO CONTROL HVMZA1254A
H5002	1543D02011	HEAD.FULL ERASE HVFHF0060A
⚠ M101	1596P48001	MOTOR.LOADING MXN-13FB09C
⚠ M2001	1594J98003	CAPSTAN DD UNIT SP39BC
⚠ M2003	1589V11003	MICRO MOTOR EP13CC
SW101	0520244003	MODE SWITCH SRZZ0B064A
PCB570	A51101A570	DECK RELAY PCB ASS'Y VE4662
⚠ UN4001	A53102A500	CYLINDER UNIT ASS'Y A53102A500

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
RESISTORS		
R1046	R00202330J	RC 33 OHM 1/2W
⚠ R1088	R615812R7J	R,FUSE 2.7 OHM 1W
R9021	R311815R6J	R,METAL OXIDE 5.6 OHM 1W
R9150	R3148B390J	R,METAL OXIDE 390 OHM 3W
R9151	R3148B390J	R,METAL OXIDE 390 OHM 3W
R9152	R31281221J	R,METAL OXIDE 220 OHM 1W
CAPACITORS		
C146	E02L00102M	CE 6.3YK1000M
C752	E02L00221M	CE 220 UF 6.3V
C801	E02302101M	CE 100 UF 16V
C1004	E02L02471M	CE 16YK470M
C4096	E02L00102M	CE 6.3YK1000M
C4531	E02Y03222M	CE 2200 UF 25V
C5024	P23200183J	CMPL 0.018 UF 50V
C5025	P23200153J	CMPL 0.015 UF 50V
C9002	CB3730MH3M	CC 0.0022UF 250V
C9003	E52SFH680M	CE 68 UF 400V
C9004	E01D03102M	CE 1000 UF 25V
C9009	P2222B224K	CMP 0.22 UF 250V
C9012	C030BN7S2K	CC 560 PF 2KV
C9104	E01D03152M	CE 1500 UF 25V
SEMICONDUCTORS		
D101	D28TEQS040	DIODE,SCHOTTKY 11EQS04TA1B2
D102	D97U01501B	DIODE,ZENER MTZJ15B T-77
D103	D17T001320	DIODE,SILICON 1SS132T-77
D105	D97U05R61B	DIODE,ZENER MTZJ5.6B T-77
D106	D17T001320	DIODE,SILICON 1SS132T-77
D107	D97U06R81B	DIODE,ZENER MTZJ6.8B T-77
D108	DD3RLFB01L	DIODE,SILICON LFB-01L
D109	D17T001320	DIODE,SILICON 1SS132T-77
D110	DD7RN202U0	DIODE,SILICON DAN202UT107
D111	DD7TR202U0	DIODE,SILICON DAP202UT107
D112	DD3RLFB01L	DIODE,SILICON LFB-01L
D115	D28TEQS040	DIODE,SCHOTTKY 11EQS04TA1B2
D351	D97U01801B	DIODE,ZENER MTZJ18B T-77
D353	D97U01301B	DIODE,ZENER MTZJ13B T-77
D501	DD3RB3003P	DIODE,SILICON SB30-03P-TD
D502	DD3RLFB01L	DIODE,SILICON LFB-01L
D503	D17T001320	DIODE,SILICON 1SS132T-77
D506	D17T001320	DIODE,SILICON 1SS132T-77
D507	DD3RLFB01L	DIODE,SILICON LFB-01L
D508	DD3RB3003P	DIODE,SILICON SB30-03P-TD
D512	DE7RB15020	DIODE,ZENER UDZ15B
D513	DE7RB5R120	DIODE,ZENER UDZ5R1B
D514	DD3RLFB01L	DIODE,SILICON LFB-01L
D515	D17T001320	DIODE,SILICON 1SS132T-77
D517	DDBRFPB540	DIODE,SCHOTTKY BARRIER SFPB-54V
D518	DDBRFPB540	DIODE,SCHOTTKY BARRIER SFPB-54V
D519	DD3RLFB01L	DIODE,SILICON LFB-01L
D520	DD3RLFB01L	DIODE,SILICON LFB-01L
D754	0021721150	LED SLR-342VCT32
D756	0021721150	LED SLR-342VCT32
D761	0021721150	LED SLR-342VCT32
D762	0021721150	LED SLR-342VCT32
D1001	0001300030	LED SLR-938C-4-AB
D1004	D17T001320	DIODE,SILICON 1SS132T-77
D1005	D17T001320	DIODE,SILICON 1SS132T-77
D1006	D17T001320	DIODE,SILICON 1SS132T-77
D4006	D17T001320	DIODE,SILICON 1SS132T-77
D4007	D17T001320	DIODE,SILICON 1SS132T-77
D4008	D17T001320	DIODE,SILICON 1SS132T-77
D4009	D17T001320	DIODE,SILICON 1SS132T-77
D4301	D97U01301B	DIODE,ZENER MTZJ13B T-77
D4302	D97U06R81B	DIODE,ZENER MTZJ6.8B T-77
D4303	DE7RB13020	DIODE,ZENER UDZ130B
D4501	DD8R10QS04	D.,SCHOTTKY BARRIER EC10QS04-TE12R
D4502	DD8R10QS04	D.,SCHOTTKY BARRIER EC10QS04-TE12R
D4503	DD8R11FS20	DIODE,FAST RECOVERY EC11FS2-TE12R
D4504	DD8R10QS04	D.,SCHOTTKY BARRIER EC10QS04-TE12R
D4507	DE7RB18020	DIODE,ZENER UDZ18B
D5001	D17T001320	DIODE,SILICON 1SS132T-77
D6001	D9JTA33010	DIODE,ZENER UZT33M-TA
D6002	D17T001320	DIODE,SILICON 1SS132T-77
D6003	DD3RLFB01L	DIODE,SILICON LFB-01L
D8001	DD7R0S3550	DIODE,SILICON 1SS355 TE-17
D8002	D51R003380	DIODE,VARIABLE CAPACITOR MA338
D8003	DD7R0501V0	DIODE,SOHOTTKY BARRIER RB501V-40
D8004	DD8R10QS04	D.,SCHOTTKY BARRIER EC10QS04-TE12R
D8005	DD8R10QS04	D.,SCHOTTKY BARRIER EC10QS04-TE12R
⚠ D9001	D2Z0S1WBA0	DIODE S1WBA60

REF.NO.	PART NO.	DESCRIPTION
SEMICONDUCTORS (CONT.)		
D9006	DD7TR202U0	DIODE.SILICON DAP202UT107
D9007	DD7RB050L0	DIODE.SILICON RB050L-40
⚠ D9008	D28A000600	DIODE.SILICON F5KQ60
D9009	D93012401B	DIODE.ZENER GZB24B
D9010	D97U01001B	DIODE.ZENER MTZJ10B T-77
D9011	002112Q050	LED LN81RCPH-(TA2)
D9012	002112Q050	LED LN81RCPH-(TA2)
D9013	DD3RLFB01L	DIODE.SILICON LFB-01L
D9014	DE7RA2400B	DIODE.ZENER RLZ24B TE-11
D9015	D97U01201B	DIODE.ZENER MTZJ12B T-77
D9016	DE7RA1200B	DIODE.ZENER RLZ12B TE-11
D9017	DD7TR202U0	DIODE.SILICON DAP202UT107
D9018	D28T11DF20	DIODE.SILICON 11DF2-TA2B2
D9019	D1VT001320	DIODE.SILICON 1SS132T-77
D9021	D97U01201B	DIODE.ZENER MTZJ12B T-77
D9022	DE7RA03R9B	DIODE.ZENER RLZ3.9B TE-11
IC101	I55D06042A	IC OEC6042A
IC102	IC3D0C04F0	IC ST24C04FB6
IC103	I0UJ0T600H	IC PST600HMT
IC104	I5HF01350H	IC S-81350-HG-KD-X
IC351	I01SP52650	IC AN5265
IC504	I0BF9AI010	IC SAI-01-V1
IC505	I0BF9AI010	IC SAI-01-V1
⚠ IC506	I0GA99RF13	IC PQ09RF13
IC507	I06J95237M	IC M5237ML
⚠ IC509	I0GA9RV210	IC PQ30RV21
IC1001	I57F59031A	IC OEC9031A
IC1002	I07S09029A	IC OEC9029A
IC1003	I0GF9VZ110	IC PQ20VZ11
IC4001	I03D374420	IC LA7442
IC4002	I53D399700	IC LC89970
IC4101	I03FG7411M	IC LA7411M-TP-T
IC4301	I07S076050	IC BA7605N
IC4501	I07F09742V	IC BA9742FV-E1
IC4502	I0QF029030	IC NJM2903M
IC5001	I03D772860	IC LA7286
IC6001	I03F071050	IC LA7105M-TP-T1
IC6002	I03F06358M	IC LA6358M-TP-T1
IC6003	I06DA52342	IC M52342SP
IC6004	I0GA99RF13	IC PQ09RF13
IC6005	I07F061610	IC BA6161F-E2
IC7001	I0GFCY18A0	IC IR3Y18A
IC7002	I55F04538B	IC TC4538BF(EL)
IC7003	I03F07217M	IC LA7217M-TRM
IC8001	I01FD39510	IC MN83951
IC8002	I0QF021150	IC NJM2115M(T1)
IC8006	I55F7SH040	IC TC7SH04F
IC8007	I0QF0M3530	IC NJM353M
IC8008	I55FC7W140	IC TC7W14FU
IC9001	I53F93017A	IC OEC3017A
IC9002	I15S938100	IC MA3810
IC9003	I07F00358F	IC BA10358F-E1
IC9004	I05F08L05F	IC TA78L05F
IC9005	I9UJ0T600D	IC PST600D
Q101	T85A02883Y	TRANSISTOR.SILICON 2SC2883 Y
Q102	TP7TC05001	COMPOUND TRANSISTOR DTA124EKT147
Q103	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q104	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q105	TN7TD05001	COMPOUND TRANSISTOR DTC144EKT147
Q106	TP7TD05001	COMPOUND TRANSISTOR DTA144EKT147
Q501	TN7TD05001	COMPOUND TRANSISTOR DTC144EKT147
Q502	TD3T011110	TRANSISTOR.SILICON 2SD1111-AA
Q504	TN7TD05001	COMPOUND TRANSISTOR DTC144EKT147
Q513	TN7TB05001	COMPOUND TRANSISTOR DTC114EKT147
Q515	T77A011880	TRANSISTOR.SILICON 2SB1188T101
Q516	T77A011880	TRANSISTOR.SILICON 2SB1188T101
Q517	T77A011880	TRANSISTOR.SILICON 2SB1188T101
Q518	T77A011880	TRANSISTOR.SILICON 2SB1188T101
Q520	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q521	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q522	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q752	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q753	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q754	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q757	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1001	0000700320	TRANSISTOR.PHOTO RPT-38PB113
Q1002	TCYT2872S0	TRANSISTOR.SILICON 2SC2872S
Q1003	0000700320	TRANSISTOR.PHOTO RPT-38PB113
Q1004	TC3T0536KG	TRANSISTOR.SILICON 2SC536KG-NP-AA
Q1006	0002G00490	PHOTO COUPLER GP1S94
Q1008	0002G00490	PHOTO COUPLER GP1S94
Q1009	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q1010	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
SEMICONDUCTORS (CONT.)		
Q1011	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1015	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1017	TA3T0984K0	TRANSISTOR.SILICON 2SA984K-AA
Q1018	TP7TC05001	COMPOUND TRANSISTOR DTA124EKT147
Q1019	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4001	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4003	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4005	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q4006	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4007	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4010	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4012	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q4014	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4017	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4018	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q4020	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q4022	TA7T0933S0	TRANSISTOR.SILICON 2SA933STP(R,S)
Q4023	TP7TC05001	COMPOUND TRANSISTOR DTA124EKT147
Q4024	TP7TC05001	COMPOUND TRANSISTOR DTA124EKT147
Q4025	TN7TJ05001	COMPOUND TRANSISTOR DTC114TKT147
Q4027	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4301	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4302	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4303	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q4304	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4305	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q4501	TS1M000024	COMPOUND TRANSISTOR XP1601
Q4502	T73A012030	TRANSISTOR.SILICON 2SB1203-TL
Q4503	T73A012030	TRANSISTOR.SILICON 2SB1203-TL
Q4504	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4505	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4510	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q4511	T77A013860	TRANSISTOR.SILICON 2SB1386
Q4512	T93A018030	TRANSISTOR.SILICON 2SD1803-TL
Q4513	T93A018030	TRANSISTOR.SILICON 2SD1803-TL
Q4514	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q5001	TC1T013170	TRANSISTOR.SILICON 2SC1317-T
Q5002	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q6001	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q6003	T82A037340	TRANSISTOR.SILICON 2SC3734
Q6004	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q6005	T83A028140	TRANSISTOR.SILICON 2SC2814-T
Q7001	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q7002	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q7003	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q8001	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q8002	TS7M000019	COMPOUND TRANSISTOR(IC)IMD2AT108
Q8003	TN7TC05001	COMPOUND TRANSISTOR DTC124EKT147
Q8005	TS7M000023	COMPOUND TRANSISTOR IMZ1A
Q8006	TS7M000023	COMPOUND TRANSISTOR IMZ1A
Q8007	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q8008	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q8009	T67A1037K0	TRANSISTOR.SILICON 2SA1037KT147
Q8010	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q9003	TA2T018970	TRANSISTOR.SILICON 2SA1897
Q9004	T87A2412K0	TRANSISTOR.SILICON 2SC2412KT147
Q9005	TP7TB05001	COMPOUND TRANSISTOR DTA114EKT147
Q9006	TD3T007340	TRANSISTOR.SILICON 2SD734(E,F)-AA
⚠ Q9007	0002200490	PHOTO COUPLER PS2561-1-V
COILS & TRANSFORMERS		
L101	0216S1330J	COIL 33 UH
L351	021AM1220K	COIL 22 UH
L352	021AM1220K	COIL 22 UH
L502	021W02101L	COIL.CHOKE 100 UH
L503	021W02101L	COIL.CHOKE 100 UH
L504	021W0D221L	COIL.CHOKE 220 UH
L505	021W0D221L	COIL.CHOKE 220 UH
L4001	02167D101K	COIL 100 UH
L4002	021JA6150K	COIL 15 UH
L4003	021JA6121K	COIL 120 UH
L4004	021JA6271K	COIL 270 UH
L4005	021JA6151K	COIL 150 UH
L4006	021JA6470K	COIL 47 UH
L4007	021JA6100K	COIL 10 UH
L4010	021JA6271K	COIL 270 UH
L4011	021JA6220K	COIL 22 UH
L4012	021JA6271K	COIL 270 UH
L4013	021JA6220K	COIL 22 UH
L4014	02167D101K	COIL 100 UH
L4015	02167D101K	COIL 100 UH
L4017	021JA68R2K	COIL 8.2 UH
L4020	021JA6100K	COIL 10 UH
L4021	021673101J	COIL 100 UH

REF.NO.	PART NO.	DESCRIPTION
COILS & TRANSFORMERS (CONT.)		
L4023	021673101J	COIL 100 UH
L4024	021673101J	COIL 100 UH
L4101	021673101K	COIL 100 UH
L4301	021AM1101K	COIL 100 UH
L4302	021AM1101K	COIL 100 UH
L4303	0216S1220J	COIL 22 UH
L4304	0216S1220J	COIL 22 UH
L4305	0216S1100J	COIL 10 UH
L4501	0218M8330M	COIL 33 UH
L4502	0218M8330M	COIL 33 UH
L4503	0218M9101M	COIL 100 UH
L4504	0218M8101M	COIL 100 UH
L4505	021AM1101K	COIL 100 UH
L4506	021AM1101K	COIL 100 UH
L4507	0218M9101M	COIL 100 UH
L5001	021673102K	COIL 1000 UH
L5002	02167D562K	COIL 5.6 MH
L5003	02167D102K	COIL 1 MH
L5004	02167D562K	COIL 5.6 MH
L6001	021AM1101K	COIL 100 UH
L6002	021AM1101K	COIL 100 UH
L6003	03370MS01R	COIL,VIDEO IFT 374MS01
L6005	0216S11R2J	COIL 1.2 UH
L6006	033700003R	COIL,VIDEO IFT 3700003
L6008	021AM1101K	COIL 100 UH
L6010	0216S1150J	COIL 15 UH
L6013	021673821K	COIL 820 UH
L6014	0216S1470J	COIL 47 UH
L6015	021AM1101K	COIL 100 UH
L7001	021AM1470K	COIL 47 UH
L7002	03372R002R	COIL,CHROMA 372R002
L7003	0216S18R2J	COIL 8.2 UH
L7004	03372RS01R	COIL,CHROMA 372RS01
L7005	0216S1330J	COIL 33 UH
L7007	0216S3470K	COIL 47 UH
L8001	0216S12R7J	COIL 2.7 UH
L8002	021AM1470K	COIL 47 UH
L8003	021AM1470K	COIL 47 UH
L8004	021AM1470K	COIL 47 UH
L8005	021AM1470K	COIL 47 UH
L8006	021AM1470K	COIL 47 UH
⚠ L9001	029X000071	COIL,LINE FELTER SS10V-04220
L9005	021W66100M	COIL,CHOKE 7608N-100K
⚠ T4501	0481030241	TRANSFORMER.SWITCHING 81030241
⚠ T4502	0481030231	TRANSFORMER.SWITCHING 81030231
⚠ T4503	0481030231	TRANSFORMER.SWITCHING 81030231
T5001	033626010R	COIL,BIAS OSC 3626010
T9001	0481280111	TRANSFORMER.SWITCHING 8128011
JACKS		
J351	0602131008	JACK,RCA PIN HSJ0913-01-140
⚠ J501	0602608002	POWER JACK HEC3810-010010
J4301	0602400005	JACK,RCA PIN JPJ1157-010043
J4302	0602400005	JACK,RCA PIN JPJ1157-010043
J9001	0602608002	POWER JACK HEC3810-010010
SWITCHES		
SW771	0504201T31	SWITCH.TACT SKHVBE069A
SW772	0504201T31	SWITCH.TACT SKHVBE069A
SW775	0504201T31	SWITCH.TACT SKHVBE069A
SW776	0504201T31	SWITCH.TACT SKHVBE069A
SW777	0504201T31	SWITCH.TACT SKHVBE069A
SW778	0504201T31	SWITCH.TACT SKHVBE069A
SW779	0504201T31	SWITCH.TACT SKHVBE069A
SW781	0504201T31	SWITCH.TACT SKHVBE069A
SW1001	0500A01026	PUSH LEVER SWITCH MPU10230MLB0
SW1002	0500A01026	PUSH LEVER SWITCH MPU10230MLB0
SW9001	0504201T31	SWITCH.TACT SKHVBE069A
VARIABLE RESISTORS		
VR7001	V1263Q3BT6	VOLUME.SEMI FIXED RH0638CS3R02A
VR7002	V1263H4BT6	VOLUME.SEMI FIXED RH0638CJ4R02A
VR7004	V1263H4BT6	VOLUME.SEMI FIXED RH0638CJ4R02A
VR7005	V1263Q4BT6	VOLUME.SEMI FIXED RH0638CS4R02A
VR8001	V1263H4BT6	VOLUME.SEMI FIXED RH0638CJ4R02A
VR8002	V126314BT6	VOLUME.SEMI FIXED RH0638C14R02A
P.C. BOARD ASSEMBLIES		
PCB010	A53102A01A	PCB ASS'Y VM6115A
PCB030	A53102A03A	PCB ASS'Y VE6774A
PCB240	A53102A24A	PCB ASS'Y TM6360A
PCB330	A53102A33A	PCB ASS'Y VE5686B

REF.NO.	PART NO.	DESCRIPTION
P.C. BOARD ASSEMBLIES (CONT.)		
PCB340	A53102A34A	PCB ASS'Y VE6776A
PCB390	A53102A39A	PCB ASS'Y TE6909A
PCB570	A51101A570	PCB ASS'Y VE4662B
MISCELLANEOUS		
AD001	0624000005	PLUG WEV2020-9001R
ANT001	125C008001	ANTENNA.ROD T4-216A
B501	024DT03583	CORE.BEADS LFP3A-M3A0TC
B502	024DT03583	CORE.BEADS LFP3A-M3A0TC
BT601	1412004008	BATTERY.MANGAN R03(AB)E 20 T
BT602	1411300058	BATTERY.NICAD P-15AS/10U7
B1001	024DT03583	CORE.BEADS LFP3A-M3A0TC
B4501	024AC45006	CHIP SOLID INDUCTOR BLM41A800SPT
B9004	024DT03583	CORE.BEADS LFP3A-M3A0TC
CD001	1216164401	CORD.CAR BATTERY MA-255-2
CD701	068122068A	CORD.EIS CONNECTOR 8122068A
CP101	067R008019	WIRE HOLDER 51048-0800
CP102	067R012019	WIRE HOLDER 51048-1200
CP701	069X220509	CONNECTOR PCB SIDE S2B-PH-K-S
CUS01	800JF00166	CUSHION-A
CUS03	800JF00204	CUSHION-C
CUS04	800JF00166	CUSHION-A
CUS05	800JF00197	CUSHION-B
CUS06	800JF00204	CUSHION-C
CUS07	800JF00166	CUSHION-A
CX701	06972E0549	CONNECTOR PCB SIDE TKC-W14X-C1
CY701	06972EM010	CONNECTOR PCB SIDE TKC-W14P-B1
CD1002	068128106B	CORD.EIS CONNECTOR 8128106B
CD1003	06812C027A	CORD.EIS CONNECTOR 812C027A
CD1004	068124052A	CORD.EIS CONNECTOR 8124052A
CD1005	06812C069B	CORD.EIS CONNECTOR 812C069B
CD2401	068101420A	CORD.EIS CONNECTOR 8101420A
CD8001	122B0U0601	CORD.JUMPER 2B0U0601
⚠ CD9001	1206555801	CORD.AC BUSH 06555801
CD9002	06C5TB0001	CORD.CONNECTOR C5TB0001
CF6001	1012A5R511	FILTER.CERAMIC SFSL5.5MCB
CF6002	1027238R91	FILTER.SAW F-1044QS
CF6003	1012A5R512	FILTER.CERAMIC TRAP TPSL5.5MB
CP1001	06942C0139	CONNECTOR PCB SIDE 1-173979-2
CP1002	0694280129	CONNECTOR PCB SIDE 173981-8
CP1003	0697150310	CONNECTOR PCB SIDE TAS-X05X-D1
CP1004	06942C0129	CONNECTOR PCB SIDE 1-173981-2
CP1005	0694240129	CONNECTOR PCB SIDE 173981-4
CP4101	069J740109	CONNECTOR PCB SIDE IMSA-9603S-04C
CP4102	069R750499	CONNECTOR PCB SIDE 52492-0520
CP4103	0697FM0080	CONNECTOR PCB SIDE TMC-N22X-B1
CP4502	069X32T01A	CONNEC.PCB SIDE SM02(8.0)B-BHS-1
CP8001	069RYUT029	CONNECTOR PCB SIDE 52559-3092
CY1002	06979K0040	CONNECTOR PCB SIDE TMC-N20P-E1
CY4001	06979M0040	CONNECTOR PCB SIDE TMC-N22P-E1
DL7001	104A14R43K	DELAY LINE GLASS ADL-CP944R
⚠ F9001	080PT02002	FUSE 218002
FH9001	06710T0006	HOLDER.FUSE EYF-52BC
FH9002	06710T0006	HOLDER.FUSE EYF-52BC
⚠ ICP501	0832C03001	MICRO FUSE CCV 3A
⚠ ICP503	0832C03001	MICRO FUSE CCV 3A
NR1001	11024472T1	R.NETWORK RGLD4X472J-T21
OS701	0779000012	REMOTE RECEIVER GP1U271R
PF8001	11614C12M1	FILTER EMI ELKE101FA
PF8002	11614C12M1	FILTER EMI ELKE101FA
PF8003	11614C12M1	FILTER EMI ELKE101FA
PF8004	11614C12M1	FILTER EMI ELKE101FA
PF8005	11614C12M1	FILTER EMI ELKE101FA
PF8006	11614C12M1	FILTER EMI ELKE101FA
PT9001	126C000002	TERMINAL.PIN ST-0015
PT9002	126C000002	TERMINAL.PIN ST-0015
RY501	0560X20116	RELAY G6B-1114P-US-DC12
SP701	070J532010	SPEAKER AA0116L
TM601	0766094140	TRANSMITTER SBER20105A
⚠ TU6001	0145601030	TUNER TELE4-055A
V8001	095116R501	LCD EDTCA03Q7F
X102	1001T8R004	CERAMIC.OSCILLATOR EF0EC8004T4
X103	100C32R803	CRYSTAL DSVT-200 32.768KHZ
X1001	100CA8R005	CRYSTAL HC-49/U-S 8.0MHZ
X4001	1006A4R303	CRYSTAL HC-49/U 4.433619MHZ
X7001	100CA4R404	CRYSTAL HC-49/U-S 4.433619MHZ
X7003	1002F0R501	CERAMIC.OSILLATOR CSB500FB9
X9001	1001T4R006	CERAMIC.OSCILATOR EF0EC4004T4

RESISTOR
RC........CARBON RESISTOR

CAPACITORS
CC........CERAMIC CAPACITOR
CE........ALUMI ELECTROLYTIC CAPACITOR
CP........POLYESTER CAPACITOR
CPP.......POLYPROPYLENE CAPACITOR
CPL.......PLASTIC CAPACITOR
CMP.......METAL POLYESTER CAPACITOR
CMPL......METAL PLASTIC CAPACITOR
CMPP......METAL POLYPROPYLENE CAPACITOR
CST.......STYROL CAPACITOR